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A SYSTEM

OF

FIGURE-SKATING.

A SYSTEM

OF

FIGURE-SKATING.

BEING THE THEORY AND PRACTICE
OF THE ART AS DEVELOPED IN ENGLAND, WITH A GLANCE AT
ITS ORIGIN AND HISTORY.

BY

H. E. VANDERVELL
AND
T. MAXWELL WITHAM,

Members of the London Skating Club.

THIRD EDITION.

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PREFACE TO THE THIRD EDITION.

THE increasing demand for *A System of Figure Skating*, which has been greatly stimulated by the late severe frosts, has necessitated the production of a third edition.

This is highly gratifying to us, and is the best proof of the utility of the work.

The considerable literary labour involved in its production has been entirely carried out by Mr. Witham, who has written up the Art of Figure-Skating on Ice, including all the new combined Figures skated by us and others at the present time.

The exhaustive article on Roller-Skating is also entirely his work. It will, doubtless, be acceptable to very many. It renders the book complete.

H. E. VANDERVELL.

11, WARNFORD COURT, E.C.

Figure-Skating is essentially an imitative Art, and it was a grave question with us when the first edition of this work was published, whether written descriptions of Figures skated on the ice would enable learners, who had never seen them skated, to imitate them. The hundreds of good skaters who have testified that their skill has been derived entirely from the study of this little book, solves the question and is a source of great satisfaction to us.

T. MAXWELL WITHAM.

5, GRAYS INN SQUARE,
January, 1880.

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A SYSTEM

OF

FIGURE-SKATING.

A
SYSTEM OF FIGURE-SKATING.

CHAPTER I.

A GLANCE AT THE ORIGIN AND HISTORY OF SKATING.

GEOLOGISTS tell us that the earth was formed under great heat, and that it is gradually cooling down,—decidedly a cheering prospect for future skaters. Astronomers, on the other hand, we believe, incline to the opinion that it has approached a trifle nearer to the sun, and the calculations derived from the recent transit of Venus, though at present incomplete, seem to indicate this. Now, should such be the case, it is highly probable that the skater of the future, unless blessed with an artificially frozen surface or an artificial ice, will have to carry out his art on skates with wheels.

Notwithstanding the great heat which undoubtedly accompanied the Creation, it is certain that the formation of ice is amongst the earliest phenomena of nature. In the Book of Job (the oldest in the Bible) we find that when Elihu was reproving him and setting forth the wonderful power of God as displayed in His natural works, he used these words,—"By the breath of God frost is given, and the breadth of the waters is straitened;" and that when God Himself takes up and continues that most beautiful exposition of His omnipotence, "the waters are hid as with a stone, and the face of the deep is frozen."

Thus we have Divine authority for the very early existence of ice. Now comes the question so difficult to answer: When was it first used for the purposes of the skater?

In our endeavours, as far as we can, to answer it, we shall first bring under the reader's notice the information respecting the origin of skating which we have received from Stockholm through the kindness of a friend, Mr. Kreuger, a native of Sweden. We subjoin a translation, merely premising that it fixes the introduction of the iron skate at two hundred years after the birth of Christ, and attributes the origin of it to the still more antique snow-shoe; and we entirely agree in this latter opinion, and had already written to the same effect.

Remarks on the Origin of Skating.

TRANSLATED FROM THE SWEDISH.

"When this exercise was originated is unknown, for, as far back as we have any account of it, it was perfectly well known and practised in the whole North. Its origin, however, unquestionably belongs to the people of the North—that is, to the Scandinavians and Germans, amongst whom it is in most common use—because the Greeks and Romans knew nothing of this science, nor have they any special terms in their language to express skates or skating. The origin of skates in their present form of a wooden shoe with iron runners cannot be reckoned further back than the so-called Iron Age, or about two hundred years after the birth of Christ, because iron first came into general use then throughout the North.

"The art of sliding with snow-shoes or runners, from which skating is derived, is still older, and belongs to the inhabitants of the North. But these shoes were made only of wood, and resembled our present form of snow-shoes, which are used by the inhabitants of the most northerly parts of Sweden and Norway in the mountain tracks on their journeys across the immense snow-fields. These were also used originally by the Finnish people in the North, for which reason they were called [illegible] this time 'Skrid finnai' (sliding Finns) a common name for the most ancient inhabitants of Sweden both in the Norsk Saga and by foreign authors. After iron became known and was worked in the North, iron runners were put under these snow-shoes; and in this way the present form of skates was developed, as well as proficiency gained in skating on the ice,—a proficiency in which the Northern people early excelled, and which was reckoned as one of their chief accomplishments, and about which the Norsk Saga speaks with pride. But as amongst these Northern people also were Anglo-Saxons, who in the year 450 subdued the south part of Britain, together with Danes and Normans, who—the former in 1015, and the latter in 1066—conquered the whole of England, probably the use of skates was introduced by these people into England together with other Northern customs.

"On these grounds the origin of the present form of skates and skating may be attributed to the Northern people about two hundred years after the birth of Christ."

Other friends of ours, well acquainted with many Anglo-Russian gentlemen of great ability, send us their collective and unanimous opinions, which certainly seem to ignore Russia as having any concern in the origin of skating; for they all without exception concur in saying that "skating not only is by no means a national amusement of Russians, but is of entirely foreign and quite recent introduction. Skates are quite unknown in the interior, and even a few miles from St. Petersburg. Mr. G—— remembers creating a great sensation in St. Petersburg by showing off a few figures some thirty years ago. No Russians skate, except those who have resided at St. Petersburg. The way the ice forms, indeed, in the rapid-running rivers of Russia affords no facilities for the sport; yet it is curious the art has not been cultivated in so cold a country, as there must be many ponds, lakes, &c., that would afford good skating. In St. Petersburg itself the only water that affords skating is an artificial pond kept up by the German and English residents."

From Amsterdam we have not been successful in adding anything to the above information. However, perhaps a closer search *in Holland* generally would be better rewarded. We regret that at present we are unable to make it, more especially as it is the native country, on the paternal side, of one of the writer's ancestor, all of whom, however, have long since passed away, and sources of information that otherwise might have been available are now dried up. In London, then, must we hunt up something more about this obscure matter.

To the courtesy of C. Knight Watson, Esq., Secretary of the London Society of Antiquaries, we are indebted for the following interesting particulars, which, if not settling the question, yet tend to throw a little more light upon this most puzzling subject, the origin of skating. The information is contained in a lecture delivered 18th February, 1841, by Charles Roach Smith, Esq., F.S.A., who exhibited to the Society an ancient bone skate, accompanied by the following remarks in a letter to Sir H. Ellis:—

"In illustration of the antiquity and progressive improvement of one of our popular pastimes at this season of the year, I beg to submit to the inspection of the Society a skate of the kind in fashion among the citizens of London in the time of Henry the Second.

"It is formed of the bone of some animal, made smooth on one side, with a hole at one extremity for a cord to fasten it to the shoe. At the other end a hole is also drilled horizontally to the depth of three inches, which might have received a plug, with another cord to secure it more effectually.

"It was found about two years since in Moorfields, near Finsbury Circus, in the boggy soil peculiar to that district. Its identity is, I conceive, fully established by the following passage in Fitz-Stephen, from his description of the sports of the citizens of London in his days:—'When that great moor, which washeth Moorfields at the north wall of the city, is frozen over, great companies of young men go to sport upon the ice,' &c. After describing their mode of sliding, he continues:—'Some are better practised to the ice, and bind to their shoes bones, as the legs of some beasts (*tibias scilicet animalium*), and hold stakes in their hands, headed with sharp iron, which sometimes they strike against the ice: and these men go on with speed, as doth a bird in the air, or darts shot from some *warlike engine.*'"

Strutt, in his "Sports and Pastimes," confesses his inability to trace the introduction of skating into this country; but of the correctness of his opinion, as to its originating in the necessities of more northern climates, there can be no question.

In Bishop Percy's translation of Runic Poetry, skating is alluded to as being one of the accomplishments of the North of the highest character. Harold, in the poem called his "Complaint," says:—"I know how to perform eight exercises—I fight with courage; I keep a firm seat on horseback; I am skilled in swimming; I glide along the ice on skates; I excel in darting the lance; I am dexterous at the oar; and yet a Russian maid disdains me."

And again, in the same collection, to show the exercises a Northern hero is proficient in:—"I am master of nine accomplishments—I play well at chess; I know how to engrave Runic letters; I am apt at my book, and know how to handle the tools of the smith; I traverse the snow on skates of wood; I excel in shooting with the bow and in managing the oar; I sing to the harp and compose verses."

In the twenty-fourth table of the "Edda," skating is spoken of in words to the same effect:—"Then the King asked what that young man could do who accompanied Thor. Thialfe answered, that in running upon skates he would dispute the prize with any of the countries. The King owned that the talent he spoke of was a very fine one," &c. (Translation of M. Mallet's "Introduction à l'Histoire de Danemarc," 2 vols. London, 1770.)

If there may arise any question among Runic scholars as to whether the passage above quoted, referring to traversing the snow on skates of wood, may not be more applicable to snow-shoes or to sledges, the description of the skate by Olaus Magnus[1] agrees perfectly with that of Fitz-Stephen. He speaks of it as being "of polished iron, or of the shank-bone of a deer or sheep, about a foot long, filed down on one side, and greased with hog's-lard to repel the wet. . . .

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[1] "Aliud vero genus quod ferro plano et polito, sive planis ossibus, cervinis vel bovinis, scilicet tibiis, naturalem lubricitatem ob innatam pinguedinem habentibus, pedali longitudine sub plantis affixis, in sola glacie lubrica cursum intendit veloccissimum, quemque in glaciali æqualitate semper currendo continuat. Cæteris bravium lucraturi currendo præveniunt qui cervinas tibias late limatis plantis affigunt porcina axungia perunctas, quia gelidis aquæ guttis velut per poras glaciei in vehementi frigore surgentibus tibiæ sic unctæ impediri aut constringi non possunt."—*Hist. Olai Magni de Gent.*, Septentrion. Basileæ, fol.

"The lower end of the bone is cut rudely away at the sides, so as to resemble the prow of a boat, and an ingenious advantage appears to be taken of a smooth ridge of bone which naturally exists at the centre of the interior articular surface, for that being left it forms a finish to the whole, and appears to answer the same purpose as the turned-up piece of steel in modern skates." . . .

In another work to which we referred, viz. "Collectanea Antiqua" (vol. i. page 167, date 1848), also by Mr. Roach Smith, F.S.A., there is a drawing of this said bone skate, and some further interesting remarks. We reproduce the drawing.

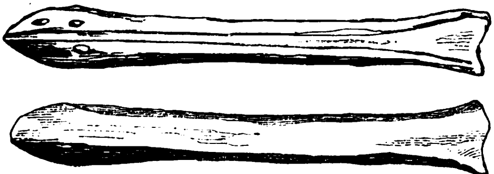

FIG. 1.—Ancient Bone Skate.

The above engraving represents in two views, a specimen of bone skates such as in former times were used by the citizens of London in one of their favourite winter pastimes. Mr. Smith goes on to say:—

"My friend, Herr Worsaae, of Copenhagen, informs me that skates of bone similar to those in my possession have been found in Holland, in Scandinavia, and particularly in the southern part of Sweden. He refers also to a very curious passage in one of the old Scandinavian mythological songs, in which it is said that Oller, or Uller, god of winter, runs on bones of animals over the ice.

"Formerly skates of bone were used in Iceland. Indeed, it appears evident they were in general use in all parts of the north of Europe. I have been informed that they were not *entirely* superseded by the steel skates in London at the latter *part of the last century.*"

In Fosbroke's "Antiquities" we found the following remarks under the head "Skating:"—"This was a great accomplishment of Thialfe in the 'Edda,' and was usual among the Northern and Celtick nations. Olaus Magnus describes the skait as of polished iron, or of the shank-bone of a deer or sheep, about a foot long. Great attention was paid to greasing them, 'because they should not be stopped by drops of water upon them.' Besides skaits, they had wooden shoes with iron points sharpened every way into teeth, triangular points of iron, &c.

"Our ancestors were not only versed in sliding, but used the leg-bones of animals fastened to their shoes, and pushed themselves on with stakes headed with iron. The wooden skaits shod with iron are said to have been invented in the Low Countries, and certainly introduced here from Holland. We had also a seat of ice, as large as a millstone, and a person placed upon it was drawn along till it sometimes happened that, moving upon slippery places, they all fell headlong. The bone skaiters fought with poles."

In Nares' Glossary, under the head "Skating," we find it described as "an exercise undoubtedly introduced among us from Holland, but a kind of rude essay towards it was made among ourselves very early by tying bones upon the feet. This we learn from Stowe, which he also had from Stephanio, or Fitz-Stephen."

He describes also contests on the ice between such skaters. Carr's remarks on Holland (1695), quoted by Todd, speak of the adroitness of the Dutch in annoying the French with the aid of their "scatzes," as he calls them, as long as the ice would bear them.

In Fig. 2 will be seen drawings of bone skates found at Lincoln.

We must now observe that skates are so called from the action of the limb required in using them: from Anglo-Saxon *scitan,* to throw out; the Dutch *schatts,* French *eschasses,* Italian *scatta,* English *escatches,* or *scatches, scate, skait, skate.* It is singular that Shakespeare never alludes to the art of skating

The *Saturday Review* of January 14th, 1865, has a very *readable article* upon skating. Many of the remarks bear so much upon its history, that we extract it nearly *in extenso*, being anxious to place before our readers everything that can throw light upon the subject, merely remarking that all the best skaters will bear us out in asserting that Mr. Benjamin West, the President of the Academy, however accomplished as a skater, never could have performed such feats as cutting out on the ice in his skates the outlines of any desired statue, and that the "double 3 on the backward roll," which the writer supposes to be a Canadian figure, and which is in reality the half-double on the back roll, was one of the earliest combinations practised by both the authors many years ago.

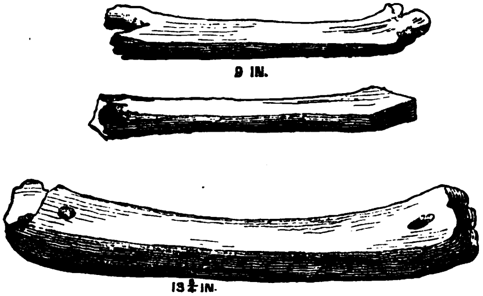

FIG 2.—Bone Skates.

"There is surely no one point in which the national degeneracy, which began with the Reform Bill and culminated in railways, is now more glaringly manifest than in the weather. To say that English weather is not what English weather used to be, is but to say what would apply equally well to port-wine, Parliamentary eloquence, and reverence for years and rank. But the falling-off in weather has been most complete. It may be the levelling tendency of the age, or it may be Admiral Fitzroy; but, if we are always to have frosts of the average length of two days each, one may as well emigrate at once to Labrador. The manlier virtues had better retire from business entirely if, after much effort, the ice in the parks is to reach the final thickness of half an inch. Who is to teach the rising generation to hurl the adventurous snowball, and fabricate the illegal slide, if the snow is to fall thinly on Saturday morning, and turn into *mud, at the latest,* on Saturday afternoon? The citizens of

London, says some old chronicler, used to hold fairs on the frozen Thames, and roast an ox whole on the ice. At present, for all that we can see, they will be just about as likely to set the Thames a-light altogether.

"Things have been getting worse and worse. In 1855 there was a fairly respectable skating season. In 1861 there was a last effort of ice to assert its existence as a creditable British institution. And now it has come to our having a balmy west wind in the beginning of January, after a couple of the most futile attempts on the part of the mercury that the oldest inhabitant is likely to remember, to reduce itself permanently below freezing-point. It must be in bitter mockery of the actual results that thermometers are graduated some twenty degrees below zero. Fahrenheit himself would blush with shame if he could have lived to feel such winters.

"In sober truth, it is rather hard upon the rising generation of English boys that they should have so little frosty weather. The art of skating, like that of swimming, is one which, when learnt betimes, is never thoroughly forgotten. To be a good skater it is not necessary to have cleverness or nimbleness, or strength. It is far more important to have boldness, and most important of all to have plenty of practice. The repeated putting off and on of the skates, the patient plodding over a difficult figure, the readiness to learn by example—these are the means by which excellence is attained; and they are much more easy to the young than to the middle-aged. There are, indeed, some cardinal maxims in good skating which the most patient learner would take long in finding out for himself. It does not suggest itself to the untutored mind that half the work is practically done by the foot which is off the ice. Ease in crossing the legs, uprightness, and, still more, slowness of action, are things which are in reality indispensable to a first-rate performer, but may very well appear of little consequence to the beginner. The fact is, that skating is the one accomplishment which is preserved solely by tradition. There are no text-books about it, no laws, no recorded principle. Age and experience have the field entirely to themselves. Rising talent may display itself in any new form that it likes, but it *seldom succeeds* in establishing fertile innovations upon the practice of the elders. It may be questioned, indeed, whether the art is not one which has in historic times experienced some decline, if it be true, as is said, that Benjamin West, the President of the Academy, was able to trace in his skates on the ice the outlines of any statue that might be named, an idea in the contemplation of which the modern mind can only take refuge in the confidence that it cannot be true. But however this may be, it must be readily conceded that the best skaters on the Long Water are not among the youngest men. The audacious pirouettes, the marvellous quadrilles, which so astonish and delight the annual crowds in Kensington Gardens, are executed most boldly and most successfully by men whose tiny silver skate has floated over the same waters for twenty seasons or more.

"An Edda of the tenth century, Strutt tells us, mentions that the god Uller was distinguished by his beauty, his arrows, and his skates. With so venerable a tradition to fall back upon, it seems a pity that the hardy Norseman has not contributed more to either the literature or the practice of skating. The practice, indeed, as has been observed, is totally independent of literature. It is most probable that the amusement is one which, in spite of Uller, was for a long time confined chiefly to the lower and middle classes, and never reached among them any very high pitch of art. It was looked upon much with the same view that the boys on the Serpentine even now seem to adopt—as an accomplishment, the acme of which was reached when the performer could succeed in running along quickly on his skates, and finishing off with a long and triumphant slide on two feet in a straight line forward. A gentleman would probably then have no more thought of trying to execute different figures on the ice than he would at the present day of dancing in a drawing-room on the tips of his toes. It was about a century ago that the rude steps of the skaters were first moulded by cultivation, though who the instructor was who first taught the slippery foot to adapt itself to 'threes' and 'eights,' history does not record.

"The first club established in these islands was that of Edinburgh, a city which still, we believe, maintains an excellent *body of skaters.* All at once the art rose to importance, and the figures were propagated in Germany, France, and Holland, and still more successfully, at a later period, in the United States and Canada. So necessary to civilization did this aristocratic amusement seem, that when trade was first opened with Brazil early in the present century, and fabulous fortunes were beginning to be realized by traffic with a country so rich and so ready to receive imports, among the first cargoes that were sent to Rio de Janeiro, a place where ice had never been seen in the memory of man, were thirty tons of warming-pans and thirty tons of skates! The greatest blow which has fallen upon English skating in modern times has been the draining of so much of the Fen country of Cambridgeshire and Lincolnshire. For mile after mile, in days past, the water would be frozen on Whittlesea, unploughed by pestilent barges, and rarely deep enough to drown; and with the long 'runners' and a fair wind behind, seventy miles a day would not be thought so very great a score. Even now the fenmen keep up their winter races, and do the mile in little over the two minutes, the fastest pace in the world. On the Witham, some winters ago, the Lincolnshire volunteers trained themselves for the feat by which a Dutch army once repulsed a force of Frenchmen on the Scheldt, and, with rifle in hand, skated down the river to Boston in 'fours,' with the captain at their head, 'majestic and wonderful to behold!'

"It would be by no means amiss if some of our best skaters would draw up and print some authoritative collection of rules and precepts. Two things are wanted: one is a set of directions for those who are learning the art, some maxims approved by experience, and suggestions that have been found useful in practice. There is probably a philosophy of skating as well as of everything else, and, at all events, there are certain principles of true skating—such, for example, as that of the straight knee—which are very insufficiently recognised in England, and quite ignored abroad. The other desideratum is much more simple of execution. It is merely a description of the principal figures, with their proper names to each.

"The absence of some such authorized vocabulary as that which we have suggested leads in practice to a good deal of *trouble. People* who are in the habit of skating together may go through a 'quadrille' quietly and easily enough; but there is no common understanding among skaters as to the arrangement and system—nor, indeed, in many cases as to the very nature—of the different figures that compose it; and, in general, a fugleman is necessary to give the word of command.

"One consequence of the traditional element in all skating practice is the divergence of national tastes. The English and the Continental fashions, at any rate, are so different, that a Dutch or German skater may be recognised at a distance on the ice. The tendency to attitudinise is carried much further abroad than it is with us. To poise the body is, of course, in each case, the chief difficulty of the performance, but the Englishman prefers to surmount it, if possible, without showing the trouble it costs. The folded arms and forward slope of the body are abominations in the eyes of the demigods of the Long Water. Into the rival merits of the various schools it is, of course, impossible to enter without prejudice, and opinions may vary indefinitely upon the point of superior gracefulness. But as regards actual ability to perform the more difficult evolutions, we are persuaded that Englishmen will be found to carry away the palm. They practise more assiduously when they get a chance, and they care more about the principle of succeeding. Canada is probably the only country which has skating clubs that could rival our own, and in the covered skating booths of Kingston and Montreal feats will be at times performed which would surprise even the park-keepers of Kensington. Boston too, and the New York Central Park, with Albany and Rochester and Burlington, have their marvels of elegance to show. But the fact probably is that, when once a certain degree of excellence has been reached, hardly anything that can be done by any one skater is too hard for another to accomplish. If one person were to begin to go through the figures with his eyes shut, a dozen others would have learnt to do the same in a week. In the course of last winter, an officer who had resided for some time in Canada was dining at an English mess, and incidentally mentioned, while speaking of the Canadian skating, a certain movement which he had seen repeatedly performed at the garrison town [illegible]om which he came. It would be described in technical language as a 'double 3 on the backward roll.' Think only of the combined difficulties of the process. The backward roll itself is sometimes considered formidable; it is popularly supposed, in fact, to be the necessary qualification for admission to the ranks of the Skating Club; and the ordinary half-double is not so easy a matter when it comes to the left foot or the inside edge. But to combine the two in one movement, and then to leave off with sufficient impetus to start at once on the other foot again: it seems hard enough in all conscience. The story, however, came to the ears of a gallant member of the Club, whose soul was superior to difficulties. He practised it resolutely for two days: at the end of the first he could manage it a little; at the end of the second he had fairly mastered the problem. Let us venture to recommend the task to any other gentleman who may be in want of something fresh to learn, in case, to the delight of skaters and the confusion of all hunting-men, the frost should come at last."

The difference in the style of American and Canadian skating as compared with that of England is most marked. It may be that the ice-rinks in those countries are too crowded or too contracted to do our large and graceful curves, or it may be that Americans and Canadians do not perceive that the smallness of their figures renders all their movements ungraceful from the necessity of such frequent and too obvious exertion in the doing of them; so that, whilst we give our just tribute of admiration to their dexterity in the art, we cannot, entertaining the views we do, arrive at any other conclusion than that such a style is *radically wrong;* for whatever may be the skill displayed in their two-footed figures, that is to say, two feet on the ice during the whole movement, there is greater skill to be displayed on one foot; and as to the superior charm and *abandon* of a skater posed as in the latter position, we fancy that there can arise no question.

We think that the skaters of England owe a great deal to the London Skating Club, and here we allude to its founders and our senior members, who have ever most wisely set their faces against the introduction into combined skating of any tricks or two-footed figures. The tradition which has been *handed down*, coupled with the practical illustrations of the art which are so well known, have preserved, elevated, and refined the style to a pitch of purity and excellence which, we fearlessly say, is unequalled in any country. Any innovations in *combined* skating that are to be found in this work are not, in our humble opinions, in the slightest degree antagonistic to the preservation and extension of this high standard, as they consist of delicate and difficult balancing on one foot carried out in movements of comparatively long duration, and pending certain changes of edge; and therefore, we venture to say, from their own intrinsic merits, they will rank as a legitimate extension and a high development of the art of combined skating, rising more and more into favour with all skaters, the better and more gracefully they may be able to illustrate them.

Taking a comprehensive view of all the different information we have gathered together, and reviewing the same, we may fairly arrive at the following conclusions without drawing too largely upon the imagination of our readers, viz.:—That the ancient snow-shoe is the parent of the skate; that the bone skate belonged exclusively to the remote period when skating was a pastime only. Then followed the introduction of iron, from the necessity of making it a more enduring and serviceable article for the purpose of travelling over the ice in long journeys, either for the requirements of the chase or trade, so that it merged at once into being a most useful implement of locomotion, as well as a source of improved and extended recreation.

From the skate we pass on to consider the art of skating. It is evident that in its simple form it has been attained and has existed during a very long period, certainly two thousand years, and how much more we know not,—not making much progress, though, as an accomplishment until the introduction of the iron, the successful application of which, as we have said, not only as a means of travelling, but also as a pastime in countries such as Holland and elsewhere, has by spreading to England given birth to the still better constructed and more highly finished skate with which Englishmen have quite recently, say in this nineteenth century, developed the *beautiful art of figure*-skating in combination.

We know not, alas! whether Thialfe used the bone or iron skate, and whichever it was we may be permitted to doubt whether he was great at "the double 3" or "outside back," but he certainly seems to have been the skater *par excellence* of those days.

Who was the ingenious inventor of the primitive or bone skate, and at what period did he live?

Whose was the fertile brain from which emanated the happy suggestion of the substitute of a wooden skate shod with iron?

Who was the daring individual who, knowing a little more of the laws of gravity and centrifugal force than his *confrères,* boldly trusted himself on the outside edge?

Who first skated backwards?

Who designed the figure 3, that aim of the young skater?

To whom are we indebted for the double and the cross rolls? And for combined skating? And Echo says, To whom? and History is silent, and therefore we cannot honour the worthy inventors from whom we, in common with all skaters, have derived a healthy exercise, and a scientific and fascinating amusement capable of almost indefinite expansion as to difficulties to be surmounted, more than by giving to their unknown names this passing tribute of our gratitude.

In our opinion the inventor of the figure 3 deserves our highest commendation as the great benefactor of figure-skating, because when that was known it was apparent that it was possible to skate in combination with other skaters. And the same praise must be awarded to the inventor of the other standard figure, the 8. It is undoubtedly from these two figures being so accurately described on the ice that we get the terms "figure-skating," or "figuring;" and further we may say that from the fact of the reverse 3, or a 3 with the left foot resembling the letter Ɛ, and the circle of inside or outside, the letters O or *C*, and the serpentine line, the letter S, has arisen amongst our ancestors not very far removed, that most ridiculous delusion (which we shall again have to allude to at the end of this work) that it was a customary habit of accomplished skaters in their day to cut out their names in a series of *evolutions* on skates: a myth which, so long sustained and transmitted through a generation or two, and still accepted by many ignorant of the footsteps of the skater with a simple faith, is certainly not the least curious part of the history of skating.

England, foremost as she has been in inventing and improving the arts and sciences, has not been behind in skating, and has, we rejoice to say, been the admitted birthplace and nursery not only of most of the single figures, but of all the combined movements. Having now had an experience of thirty years, during which we have been brought into contact with the best skaters in this country, we can truthfully affirm, from very close observation, that the art has gone on improving up to the present time, and at no former period did it ever reach its present development. In fact during the last four years it has made greater strides than at any other period. May we hope that the publication of this little work has helped?

In England the winter of 1860-61 was remarkable for great severity, a similar one not having occurred since that of 1854-55; but 1878 was even more severe, some enthusiasts having actually skated on fifty different days. Those fond of amusement on the ice (and who is not?) have had ample reason to rejoice at the long continuous frosts. The well-known words, "'Ave a pair on, sir? Skates on, sir?" invited the promenaders in the London parks in every direction, and it was apparent that thousands of the humble classes were getting their daily bread in a most inclement season by ministering to the wants of the skater.

Judging, too, from the eagerness with which the invitation was accepted in those localities, and the pastime generally carried out all over the country, from our Royal Family down even to the little Arab of the London streets with his one skate tied on with string, it was evident that the popularity of skating, always considerable, was vastly on the increase. And no wonder that this should be so, seeing that, as an exercise, it is perhaps without an exception most healthful and invigorating, warming the benumbed frame even to the extent of producing intense perspiration on the coldest day; and this *too without that loss of* breath which is, with the exception of the exercise of bicycling, common to all the violent exercises, such as running, rowing, boxing, &c., and also (unless the skater falls) without the distressing stiffness that is the concomitant of other athletic pursuits. No marvel then that thousands upon thousands may be seen betaking themselves to the frozen surface of our ornamental waters with an ardour which assuredly exceeds that occasioned by the pursuit of any other pastime; and this ardour is probably increased by the fact that from the uncertainty of our climate the opportunity for indulging in this pastime will naturally present itself but seldom and for short periods. Moreover, its popularity is increased by the amusement it affords to the non-skaters, who, as lookers-on, heartily enjoy the scene.

In the London Parks, for instance (as we might expect from a population of three millions), the truly immense concourse watching for hours the "graceful evolutions," the hairbreadth escapes from collisions, the tumble actual and imminent, and the animated and picturesque scene in general, form a sight that certainly cannot be equalled elsewhere, nor described by word-painting.

The following glowing description of the pleasure of skating, from the pen of Professor Gill, will convey some idea of the estimation in which it is held in America. The Professor, in describing the social and agreeable nature of the exercise, says: "Skating is a positive luxury of diversion, a carnival of fun and frolic, a jubilee of enjoyment. The skater in circling about on one foot, with the body inclined far from the centre of gravity, experiences a peculiarly agreeable sensation, a wonderful and indescribable fascination, which nothing but skating can produce. How the eye brightens and dances, and the faces of the gentle sex bloom with roses, fresh and genuine out of nature's own flower garden; how the nimble exercise causes the cheek to glow and the blood to thrill and every nerve in the frame to tingle. What life! what elasticity! what gliding energy! what swift and airy motion, what gay and free and blithesome activity does it embody. A swift skater makes the nearest approach to flying that we denizens of this mundane sphere can achieve with our own organs." The Professor then quotes the following extract from the works of E. G. Saltzman on gymnastics, published in Germany in the year 1793. "Skating is an exercise superior to anything that can be classed under the head of motion. Like the bird sailing through the air with wings unmoved, the skater now glides along as if impelled by the mere energy of volition, now gracefully wheeling in all the intricate curves that fancy can conceive; he wantons securely on the slippery surface that the unshod foot dare not tread. Anon the rapidity and ease with which he glides along astonishes us. We know of nothing in gymnastics that displays equal elegance and excites such divine pleasure in the mind of the performer, and would recommend it as the most efficacious remedy to the misanthrope or hypochondriac."

The number of really accomplished figure-skaters compared with the many practising the art, although considerably more than it used to be, in this country, and beyond that of any other, is nevertheless, we must admit, excessively small, the fact being that the mass is made up of young and old *learners*, who having, with all respect to them, but hazy ideas how to acquire this art properly, arrive only at a certain low degree of skill, and never seem to progress as they ought to do.

The truth is that the deep mysteries of our art are known only to the select few. If any doubt should occur to the reader, let him turn over the daily papers in this memorable winter of 1860-61 and read the doings on the ice. He will find that the ladies amused themselves by cutting out figures; that the Skating Club performed the "pedlar's acre" figure; that "serpents and birds of every description" were cut out in an elegant manner, especially by the ladies; that polkas, quadrilles, waltzes, &c., were executed; and that a little girl of ten or eleven cut out her name! Certainly the trail of a serpent may be imitated by the serpentine line, but the idea of applying the polka or "pedlar's acre" (whatever that may mean) to the art of skating is certainly as much a flight of fancy as the "birds of every description," &c.

We must confess that when we read such things as these in 1861, we were utterly surprised at first that such ignorance of what our art consists should be displayed by the writers; but on reflecting that it has ever been surrounded, as we have said *before, by mystery* and fable, we ceased to wonder.

What the footprints of the skater are, as developed in lines and figures from the lowest to the highest stage of difficulties, will be gradually made apparent, we trust, to the reader who studies this work; but it certainly does seem curious that errors of the description quoted above should not only be handed down to us as matters of truth from a bygone age, and apparently with not a spark of authority, but that they should be added to by fanciful creations from the brains of writers in the year of progress 1861,—this is certainly not what we ought to expect.

The London Skating Club was founded in the year 1830, and now consists of about 170 members, 150 being gentlemen, and twenty ladies. As the country generally furnishes as many members as London, the title of "The Skating Club of England" would perhaps be more appropriate, or it might even aspire to the appellation of "The Royal Skating Society." It is a select and perhaps rather an exclusive club, their Royal Highnesses the Prince and Princess of Wales and the Duke of Cambridge being its patrons. It is managed by a president, vice-president, committee, and honorary secretary, and is governed by a code of rules. Permission is granted to the Club by the Ranger of the Woods and Forests to erect their marquee on the banks of that part of the Serpentine called the Long Water; but since the formation of the Skating Rink belonging to the Club, and situate in the ground of the Royal Toxophilite Society, Regent's Park, the members of the Club have availed themselves but little of this permission. In anything like a skating winter, however, the space in front of the tent used to be so thronged by the general skating public that all attempts to carry out those beautiful figures which give such delight to the on-lookers were frustrated, and many of the strongest members of the Club, well-bruised all over, departed in disgust to other parts of the Serpentine, or more frequently to the outskirts and environs of the metropolis, as Battersea Park, Crystal Palace, Wimbledon Park, and above all Richmond Park. Thus it frequently happened that many hundreds of the on-lookers at these times were under the impression that the evolutions they were watching were those of members of the Skating Club, whereas they were but the isolated movements of skaters for the most part vastly inferior in ability to them; for, although there are certainly some very excellent skaters among the general public non-members, yet it is undeniable that in the ranks of the Skating Club will be found the most accomplished skaters in this country. The badge of the members is a miniature silver skate worn with a ribbon attached to the button-hole.

A Skating Club exists and has existed for many years in both Edinburgh and Glasgow, and we learn that the members are highly conservative in their method of skating, the same simple figures being now used in combination that were skated thirty years ago.

The city of Oxford developed a school of skating of its own many years ago, which seems to have been in advance of what was then generally known in figure skating, and the dexterity attained was owing to the improved form of skate-iron which was invented by a resident in Oxford, Mr. Henry Boswell. The skating, we are informed by Mr. Boswell, consisted of outside edges backwards and forwards, three single and double, and *loops!* The great difficulty with which these figures were skated on the skates then in use, caused Mr. Boswell to turn his attention to the form of the skate-iron, and he and one or two other enthusiasts at Oxford experimented with irons of different lengths and different curves, and the final result of their numerous trials was to make a skate-iron without the projecting toe, and with the heel elongated and rounded; making it in fact the same shape as the modern club skate.

When by means of the most careful experiments the form of the iron was finally determined upon (and the results of Boswell's experiments demonstrated to him that a curve having a radius of about seven feet was the best), he took the template to a Birmingham maker, and had some four dozen pairs of irons made, and these were supplied to the skaters in Oxford. With this new form of skate, skating made rapid progress, and in the year 1838 a club was formed, the members being principally mechanics, tradesmen, and College servants, and *skating in combination* was started.

The figures consisted of circles and parts of circles, of outside and inside edges, strung round a common centre with variations by means of the cross roll and threes. By the kind permission of Mr. Henry Warner, a pupil of Boswell, we reproduce some of these figures in the ladies' chapter, as they are simple of execution and very effective.

It is curious to note that in America, where combined skating is in its infancy, the first attempts at combination consist of the same movements that are set forth in the archives of the Oxford society.

The great aim of the members of the society in combined skating was *accuracy*, and the attention they paid to this accounts in a great measure for the dexterity obtained. The demand for Boswell's skates was so great that the making o them was taken up by a Sheffield firm, and the improved form of iron came into general use. Mr. Boswell was not only the ingenious inventor of the skate which, so far as the iron is concerned, is the club skate of the present day, but he was also considered the best skater in the Oxford society, and, with one of the other members, was professionally engaged to skate on the artificial ice which had been moved from Baker Street to the Coliseum.

It has been suggested that the germs of combined skating emanated from the efforts of this society at Oxford, and not from the London Skating Club ; but with this we cannot agree, as the London Skating Club was in existence some eight years before the Oxford society, and it is reasonable to suppose that the members who formed the Skating Club were to a certain extent proficient in their art ; and we find on inquiry of the now, alas ! few remaining original members, that all the figures which are described in the first series were skated by the members of the Club in 1830, and that figures in combination were skated by the men who afterwards formed the Skating Club some fifteen years before that period.

It will, we think, be generally admitted that the movements described in the first series of the Club figures are a long way in advance of the Oxford society figures, as the manner in which the skaters cross each other at the centre instead of *skating round* a common centre, has suggested the numerous combinations described in the second, third, fourth, and fifth series.

The Oxford society seems to have flourished during the time that Boswell was residing at Oxford; but he came to London some fourteen years ago, and from that period the society fell off, and has now, we believe, ceased to exist. We have previously stated that the names of the originators of the germs of our art are unknown to fame, and it is therefore with pleasure that we notice the name of Henry Boswell, as he is entitled to the gratitude of all figure-skaters for the careful experiments he made, and the improved form of iron which those experiments caused him to invent.[1]

There are now several skating clubs in the vicinity of London, which have sprung into existence within the last few years—notably we may mention those of Hampstead and Wimbledon, Crystal Palace, &c.

Southampton also boasts of a club. The members of this club have, we understand, a small silver skate as a badge of membership: we feel sure that the committee have only to be informed that a small silver skate is the "tottem" of the older society, the London Skating Club, to cause them to adopt some other distinguishing mark.

It would be well were other clubs founded throughout the country for the practice of this beautiful art. As a hint in the formation of such, we would suggest that a certain standard of excellence be agreed upon as a *sine quâ non* to those who apply for admission, in addition to the ballot-box, and that little badges of merit in accordance with the different degrees of excellence attained be granted. This would create just emulation, and, if the sub-committee of examiners were carefully chosen, would tend to elevate the art.

In the London Skating Club, previously to the formation of the rink, there had never been any direct examination of candidates for admission, although it had generally been supposed that none would be admitted but those who were to a certain degree proficient; the fact being that in the Club there was an honourable and gentlemanly feeling amongst its existing members not to propose any new member unless he bid fair to sustain the reputation for good skating which the Club has deservedly acquired.

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[1] Without knowing anything of Boswell's improvements in skates, in the year 1836, Mr. Vandervell in the year 1840 had a pair of skates made from a model which he had cut out in tin. The foot plate was of metal, the irons cut off at the toe, prolonged to and rounded at the heel, and curved to a radius of two feet. This form of skate was suggested to him by observing *how obviously bad for figure-skating* was the skate then in use.

Since the formation of the rink, a rush was made by skaters from all parts of England and Scotland to be enrolled as members of the London Skating Club, and seeing that the confined space would not admit of more than a limited number skating at the same time, the committee decided to restrict the numbers of the Club to 170, 150 being gentlemen, and twenty ladies, and cause every candidate for election to skate certain test figures in the presence and to the satisfaction of three of the committee.

This was done with a view, first, of curtailing the number of applications for membership, and, secondly, of raising the standard of skating in the Club.

The test figures adopted consist of the cross roll forwards and backwards, and a large three on either leg. These particular figures were decided upon by the committee, not because they presented any great difficulty in their execution, but because they are the groundwork of all combined skating; and a man capable of executing these particular figures can, with a little practice, take his place with others in combined movements.

As the Skating Rink in the Royal Toxophilite grounds has proved such a success, we have devoted a chapter to the mode of forming rinks.

The suggestions which we made in the first edition of this work, as to the members of the Club obtaining a skating practice ground of their own, have borne good fruit, and the enormous benefit to figure-skating which has resulted from the members of the Club meeting together on the same piece of ice, is evident from the great proficiency in the art to which so many members have now attained.

We have thought it advisable to give the rules of the Skating Club in an appendix to this work, as every year will, we trust, see the formation of new skating clubs, and it may save the "promoters" of such clubs some trouble if they take the Skating Club rules as a basis, and make such alterations as may suit the circumstances of each case.

A brother of one of the writers was at Vienna some three winters back, and, having his skates with him, performed for the honour of Old England in his best style. The people were amazed, and clapped their hands in appreciation of his double threes, &c. There was not a man out of the many skating there who had ever seen anything of the sort before, but they one and all set to work to emulate him, and the Hungarians (who are celebrated for their small feet and high insteps, great advantages to the skater) persevered with wonderful courage, despite of tumbles and failures, and made great progress. The frost unfortunately broke up. It would be curious to see if the germs of figure-skating instilled into apt pupils have borne fruit.[1]

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[1] Should there be any readers of this work in possession of any authentic information tending to throw further light upon the origin and history of skating, and who would like, in the interests of the art, to entrust it to us with a view to its insertion, should this work ever reach a fourth edition, we shall be happy to receive it.

CHAPTER II.

THE THEORY OF SKATING.

SKATING, introduced undoubtedly as a pastime, then cultivated as a means of travelling over ice for the purposes of chase or trade, has once more expanded into a charming recreation, which has gone on progressively improving to the very time we are now writing.

Philosophers years ago, when skating was in a much less advanced state, have thought it worthy of notice, from the very beautiful manner in which the curves used in figure-skating illustrate the two great forces, centripetal and centrifugal. Dr. Arnott, in his "Elements of Physics," thus most justly speaks of it:—"Skating becomes to the intelligent man an intellectual as well as a sensitive or bodily treat, from its exemplifying so pleasingly the laws of motion."

Happily, at the present day, owing to the advantages of education, almost every skater, however humble his rank, has or ought to have a knowledge more or less extensive of these laws; but, nevertheless, this book might fall into the hands of some who are ignorant of the laws of motion which control the steps of the skater. Therefore we cannot refrain from saying to such, that to thoroughly comprehend and enjoy the many scientific beauties of our art, it is necessary to know a little, at any rate, of the nature of these grand laws, which so occupied the giant mind and immortalized the name of our great Newton.

Pervading the universe, and apparent as are their effects in all our daily movements *per mare, per terram*, these forces are *in the art of skating* brought into play on ice, a novel material for our progression. We shall glide smoothly over its surface, and with our body inclined at ever-varying angles, and in a manner so very different from our ordinary habits on *terra firma*, that we cannot imagine a few winter evenings better spent than in reading up a little of the subject, which may be found most pleasantly described in the work we have mentioned, and in many others under separate heads, or collectively under "Dynamics."

Of course some few readers will say that such knowledge as applied to skating is superfluous and unnecessary, and will remind us of the fact that it has been and can be learned without; but how few there are but would have been assisted by a competent knowledge we shall endeavour to show in the course of this work.

Notwithstanding the inevitable counterblast, then, we shall give a few extracts from Dr. Arnott's very readable work on Physics, because in it he frequently alludes to our art. We would also refer the reader to an admirable comprehensive work on Natural Philosophy, by a late energetic member of our club, Mr. Brooke, a gentleman who was as fond of the difficulties of skating as of science.

MOTION

"Is the term applied to the changing of place among bodies. Were there no motion in the universe, it would be dead—it would be without the rising or setting sun, or river flow, or sound, or light, or life.

"To understand the nature and laws of the motions or changes which are going on around him, is to man of the greatest importance.

"That bodies tend to continue in the state of motion or rest in which they happen to be, so as to render force necessary to change the state, is seen in the following facts. The scientific term used to express the general truth is *inertia*. . . .

"A man standing carelessly at the stern of a boat falls into the water behind when the boat begins to move, because his *feet are pulled* forward while the inertia of the body keeps it *where it was, and* therefore without its support. The stopping of a boat again illustrates the opposite inertia of motion by the man's falling forward.

"From the instances now given it is seen that a body at rest would never move if force were not applied, and that a body put into motion retains motion, at any rate for a time, after the force has ceased. Still there is a feeling from common experience that motion is an unnatural or forced state of bodies, and that all moving things, if left to themselves, would gradually come to rest. . . .

"On more attentive consideration, however, it may be perceived that there are great differences in the duration of motions, and that the differences are always exactly proportioned to evident causes of retardation, and chiefly to friction and the resistance of the air.

"But it is in the celestial spaces that we see motion completely freed from the obstacles of air and friction, and there they slacken not.

"Force is required to bend motion. A body moving in a circle, then, or curve, is constrained to do what is contrary to its inertia. A person, on first approaching this subject, might suppose that a body which for a time has been made to move in a circle should naturally continue to do so when set at liberty. But on reflecting that a circle may be considered as made up of an infinite number of little straight lines, and that the body moving in it has its motion bent at every step of the progress, the reason is seen why constant force becomes necessary to keep it there, and just equal to the inertia with which the body tends at every point of the circle to pursue the straight line called a tangent. . . .

"The force required to keep the body in the bent course is called centripetal or centre-seeking force, while the inertia of the body tending outwards, that is, to move in a straight line, is called the centrifugal or centre-flying force.

"In skating with great velocity this leaning inwards at the turnings becomes very remarkable, and gives occasion to the fine variety of attitudes displayed by the expert; and if a skater in running finds his body incline to one side and is in danger of falling, he merely makes his skate describe a slight *curve towards* that side, and the centrifugal force of the body, refusing as it were to follow in the curve, restores the perpendicularity.

"The last example explains also why a hoop rolled along the ground goes so long without falling if it inclines to one side threatening to fall: by that very circumstance its course is bent to that side, and, like the skater who bends, it rises again; the bending of its course to either side thus brings its supporting base again under it.

"A coin dropped on the table or floor often exhibits the same phenomenon. The two great forces of nature are attraction and repulsion."

Further, there is accelerated motion from gravity, and retarded motion from gravity. Then comes,—

CENTRE OF GRAVITY.

"Now in every body or mass, or system of connected masses, in the universe, there is a point about which all the parts balance or have equilibrium, and it is this point which is called the centre of gravity or of inertia.

"To say that the centre of gravity will always take the lowest situation which the support of the body will allow is only to repeat that bodies tend by their gravity towards the centre of the earth."

Speaking of balancing, he says:—"Much art of this sort is also shown by the attitudes and evolutions of the skater, &c.; when a man walks or runs he inclines forwards that the centre of gravity may overhang the base, and he must then be constantly advancing his feet to prevent his falling. He makes his body incline just enough to produce the velocity which he desires.

"Grace of carriage includes not only a perfect freedom of motion, but also a firmness of step or constant steady bearing of the centre of gravity over the base."

We have but space for an illustration of centrifugal and centripetal force which happened to one of the writers during a youthful ramble among the Cornish mines. There was at *one of them* a smooth conical hole in the ground, about fifteen feet deep by twelve feet wide, in fact in shape like a giant funnel, and tapering to a point at the bottom. A miner, who accompanied him, asked him to get down and see if he could scramble out. The getting down he found easy enough, but the scrambling out was quite a different thing, on account of the smooth sides; and after a few fruitless efforts, the miner told him the way, viz. by running round, rising gradually, and increasing the velocity as the diameter increased. He was then quite successful, but did not think in those days of the beauty of the illustration of the working of these two great forces, which are so intimately united in the theory and practice of figure-skating, as carried out on a material of a wonderful nature, ice—on, and partly in, the surface of which our steel-mounted skate slides with an astonishingly small amount of friction, when we take into account the cutting nature of its action thereon. It is this remarkable peculiarity that constitutes the great charm of skating upon ice, so different in every respect from anything that has ever been invented of an artificial nature. And it is in this place that we must consider how important it is in the construction of the skate-iron to see that it shall not be too much curved, for then, the bearing upon the ice being short, the cutting edge will penetrate too much, and the friction will be unnecessarily increased a great deal more than it would if the skate-iron had been kept flatter, as the weight of the skater being distributed over a longer portion of the skate-iron, actually bearing on the ice, it would not cut in so deeply, and the friction would be less, notwithstanding the slight increase of bearing-surface or edge.

What we want is a sufficient hold of the ice for safety, consistent with so much of a curve as will permit us to turn comfortably without scraping.

In a recent article on skating in the *Field*, under the signature of *Comes*, allusion is made to the curve of the skate-iron having an important bearing upon the circle or arc it would most readily describe, or, in other words, that each individual curve of a skate-iron has an individual circle or arc that it would naturally describe on the ice, in preference to any other that the skater may force it to do, and all departure from which individual curve is a loss of power. There is much doubtless in this, but we are not prepared without experiment wholly to endorse it.

The width of the iron, too, is closely connected with this part of the subject. Were ice harder, the figure-skater could probably have no greater luxury than skates almost approaching to a knife-edge; but at its usual density we must have the skate-iron of such a width as will also act as a check to the penetration of the cutting edge beyond the necessary amount.

With ice which has become soft on the surface, a broad iron is better than a narrow one, but every hundredth of an inch adds considerably to the friction. If a skater accustomed to broad irons change them to narrow ones, he will at once perceive this from the greater speed at which he is able to skate; but what is gained in ease and speed is lost in execution, particularly in some of the difficult changes of edge: for instance, the continuous Canadian eights are more easily skated on broad than on narrow irons. And, *en passant*, what have skatemakers done for us in solving these most important points? We are sorry to say, absolutely nothing. As a supplement to Boswell's experiments in 1838, the whole question of the friction and penetration of the cutting edge ought to be made the subject of careful experiment, and we suppose it will devolve on some of us to do it, in the absence of any energy on the part of the constructors.

Again, skate-irons are made much too soft. They ought to be made as hard as possible without being brittle, and even the brittleness may be, in some measure, counteracted, by leaving the upper part of iron, while the under side is of the hardest steel.

A great deal has lately been done in the way of improving skates, by making the edges right-angled, and this plan comes to us from America. Formerly, from the wedge-like shape of the iron, the part touching the ice was considerably thicker than the portion attached to the wood, hence the angle of the edge was more than a right angle. For the last three years many members of the Club have had their skates ground on the American plan, viz. with right-angled edges. As there is much more substance in a right angle than in an acute angle, the steel can be made much harder without the liability to chip, and consequently the skate-irons last twice as long without requiring to be ground. The great difficulty is to get the skate-grinders to grind the blade to a true right angle, they having been so long accustomed to the acute angle.

Our ancestors by fluting their skate endeavoured to get as much "bite" of the ice as possible, but the hold was at the expense of power, as it produced the maximum of friction; we, on the contrary, finding that the right-angled edge is sufficient for "biting" the ice without slipping laterally, adopt it for the reason that it reduces the friction to the minimum.

One of the writers has skated for three seasons with a pair of right-angled skates made by Mr. Hill, of the Haymarket, the edges of which are as good as when they came from the shop, although nothing has been done to them except occasionally rubbing down with a hone any little blur that contact with a stone may have caused. Until within the last year or two skates used to be ground to the proper curve by "rule of thumb," but lately Mr. Hill has adopted an ingenious instrument in the nature of a pendulum, by means of which a skate-blade can be ground with certainty to any required curve.

We have suggested an improvement on the pendulum in the shape of a machine partaking of the nature of a slide rest to a lathe. The skate-blade is fixed rigidly in this and brought up to the lap by a screw; underneath is a guide-plate with a slot of the required radius of the skate, and by means of this, which is worked by a lever, the blade of the skate is passed across the lap, and accuracy attained. To vary the radius, different guide-plates are of course required.

Finally, skate-irons ought to be much more highly polished, the last gloss being completed lengthways of the iron, and not across, as now; this would take out the little waves which are left in, and which, trifling as they appear, are the staunch friends of friction, which we must do all we can to diminish. Have we not seen, in the history, how the skaters of a remote age were wise enough to grease their skates for anti-friction purposes!

The skater on ice, if furnished with properly constructed skates, is certainly very highly favoured when contending with the *great enemy* of motion, viz., friction; but he has also to contend with another enemy of motion, viz., the surrounding air. It will be found that we have endeavoured in our general directions and elsewhere to suggest a means of counteracting this loss of motion, so very important do we consider it, by adopting an attitude somewhat sideways, something on the same principle, probably, as that which enables a swimmer to swim faster when in that position.

We all know how difficult it is to skate against the wind, and how in a gale our way is altogether stopped unless we tack, and our beautiful combined figures are distorted and rendered impracticable. And we all know, too, on the other hand, at what a fearful velocity we can go with the wind, so great, indeed, that we have to call in our enemy, friction, to restrain our impetus.

Motion is obtained on skates by pressing the forward portion of the edge of one skate at an angular position of about forty-five degrees into the ice, and taking up the impetus, and travelling on the edge of the other skate, describing a line more or less curved, the body being therefore inclined sideways as much as will balance the centrifugal force; and this is, in fact, the theory of the balanced position, viz., an equilibrium between the attraction of gravity and centrifugal force, when those forces are called into play by our motion in a curved line, the inclination of the body being sideways from the perpendicular. The moment the balance is lost by too little inclination sideways, or, what amounts to the same thing, too much centrifugal force, the unskilful skater is thrown outwards, as it were, and probably feels the natural effects of the force of gravity in what a worthy writer calls a "jolly good tumble." But the experienced skater would in such a case probably tilt over to the other side or angle of inclination, and catch the edge of the iron, and again restore the balance by an amended and appropriate curve, in far less time than it takes us to notice it. This changing of edge is the groundwork of some difficult figures, as will be shown hereafter.

A skater may thus be thrown, as it were, beyond the attraction of gravity, &c., as he had falsely arranged for a given inclination; but he may also lose the edge when within, as it were, the centre of gravity by an accident, such as the slip of the iron; yet, whilst the "jolly good tumble" would no doubt put in an appearance, the cause is slightly different, however much similarity there might be in effect.

Being under way, the power of balancing lies in adapting a proper curve to the inclination sideways, or *vice versâ*, by gradually, imperceptibly, and continually altering and rectifying either, as they have a tendency to get wrong from the operation of friction, or any other disturbing cause.

If the velocity of the skater be very great, it is impossible to describe a small circle, say, for instance, six feet diameter. He would require to lean over so much that the skate-iron would slip. The large circle can, however, be adapted to any velocity that can be attained on skates.

We notice this to show that in the first instance our powers are restrained by what we are afraid we must call a practical defect; in the second it is not so.

It is obvious that the attainment of a steady, and therefore a true balance, preserved as such through all the intricate evolutions which it is possible to carry out on skates, can be nothing short of a great practical work, which must be developed and assisted by instructions and directions framed in accordance with the theory. The reader, when he arrives farther on, will easily comprehend the great value of the spiral figure and the serpentine line coupled with the semi-sideways position of the body as embodying such principles.

Let us now apply these principles to the consideration of the well-known inside and outside edges, and in imagination we will ask a young skater what his ideas are on the subject. He will probably answer that the inside is very easy to learn and very ugly, and the outside very difficult and very pretty; and that Paterfamilias tells him not to care about the inside, but to learn the outside, and thus leaves on his mind the impression that the two are as far removed from each other in beauty and principle as light from dark,—whereas it is well known to the most accomplished skaters that to insert a large and true curve of inside forwards into any movement is one of our most supreme difficulties. And as to the scientific part of the question, what is the real state of the case? Let us again *refer to Arnott's* example of the hoop and coin. A circle, having a flat rim and consequently two edges, when set in motion represents very fairly the evolutions of a skater, and whichever way it goes, either backwards or forwards, on the inside or outside edge, in large or in small curves, it always appears to be seeking a centre, and, on closer observation of its two edges, that it can therefore never travel on the outside, but always on that nearest to the centre, which must necessarily be the inside.

What, then, are we to understand: that the skater never travels on an outside edge? Now, the fact is, that there is in theory no such thing as an inside or outside edge; there is but one, and now we proceed to prove it:—let a skater place one foot in front of, and in line with the other, say the left, in front of the right; and, going forwards with both feet thus, describe an arc whose centre shall be on his left. To his surprise, probably, he will find that he is doing the so-called outside and inside at the same time, the left being on the out-, and the right on the in-side edge. The same thing happens also when the feet are placed side by side.

Perhaps the most striking proof that it is possible to give to a sceptical mind is this;—it is well known that skates are made about five-sixteenths of an inch wide at the bottom of the irons to prevent them cutting in too deep. But imagine a much harder ice, or a material of its nature on which it would be possible to use skates with only one edge, as a knife. It is apparent that the inside and outside would be blended into this one working edge,—the only one, in fact, that does exist in theory, and of which the said inside and outside are the representatives in practice. We are not quite sure that a very young skater of feather weight might not be able to give us a practical illustration of the truth of this on ordinary ice were it necessary, but it cannot be.

So then the words "inside" and "outside," as applied to skating, are in one sense conventional terms, which really express the opposite inclinations of the skater sideways from the perpendicular position, either to the right or left, according to the foot used, such inclination being supported on the principles already alluded to.

It is a pity that there are no words which would better express the meaning. If we were to use military terms, and say "right foot forward," "right incline," "left foot forward," "left incline," &c., we might get at the sense better, but the length of the words would be a serious objection. We have therefore, with no little regret, been obliged to retain these ambiguous words, unsatisfactory as they are, adding to our explanation that they in another sense represent the two edges of the skate as adapted for its use on ice, and that there is but one edge in the principle of skating, and that of the two edges of the skate the one that is nearest to the centre of the circle or arc being described must, from the very nature of the position of the skater, be in reality always the inside, for a skater must lean in at the turning or curve, no matter what name conventional use has given to the particular edge he is said to be upon.

It naturally follows that we are led to inquire here what it is that makes the so-called outside more beautiful, striking, and popular than the so-called inside?

It is partly owing to the very bad way in which the inside is almost invariably done, and partly to the fact that the position of the skater—balanced on one foot, and leaning over in the direction under consideration, without a leg ready, as in the inside edge, to support the employed foot in case of a mistake—appears foreign and unusual as contrasted with our ordinary habits and requirements incidental to our actions on *terra firma*. Hence its singularity when illustrated in a gliding motion.

But the reader may say, "You have already proved that in principle the inside and outside are alike, and this does not account for the difference." It does not, indeed, in consequence of the violent contrast which at present exists between the two, to the injury and disgrace of the inside, and this owing to the attitude, which always gives the idea, from the unemployed leg being held out at the side, that the skater is supported or propped up, as it were, and therefore in no apparent danger of falling; also, as usually skated, the unemployed leg has the effect of causing the circles to be very small, unless the weight of the leg be counterbalanced by a bending of the body in an opposite direction; a position which is very *unsightly.*

Now we propose a remedy for this which will bring the inside very much nearer in appearance and beauty to the outside, by giving it that semblance of danger from falling which is the charm of the outside, and which makes such a remarkable and vivid impression upon the minds of children, and even too on those of older growth. We well remember once hearing the remark of a little girl whilst clutching her mother's dress in that peculiar manner demonstrative of fear, as she watched a skater coming towards her on a smooth and steady curve of outside forwards, "Mamma! Mamma! he will fall! he will fall!"

The remedy we propose, then, is to remove the unemployed leg. Start not, gentle reader! Not by a surgical operation, but merely by placing it out of the way in the rear, as we shall more fully detail in our general directions. This will make the inside unobjectionable for figure-skating, and, as a consequence, a large and novel field of practice comes into use, and the entire system of skating can be pursued to the very end.

The position of the circus equestrian in the slow and rapid acts of horsemanship, and the lifting of his feet, will afford matter for useful reflection on the subject of outside and inside.

Here are the views of another writer on skating, Cyclos:—"The turns on the inside edge are comparatively easy, because the skater requires to lean very little off the centre of gravity,[1] and it is towards that side where he has the other foot ready to support him in case of need. Those on the outside edge are, on the other hand, very difficult to attain, because the learner must lean very considerably off the centre of gravity before he properly reaches the outside edge, and he leans to that side where he is deprived of the aid of the other foot. It would be quite impossible to stand in this position, but he can circle or curve, because the centrifugal force keeps him from falling."

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[1] Because of the weight of the unemployed leg, which is pulling him over. On the *outside* edge a skater has to lean over more to overcome the *corresponding* weight of the unemployed leg, which is on the other side of *the balance.*

In no spirit of criticism, we would merely remark that it is impossible to stand in either of the positions alluded to without motion.

It is quite the fact that a skater, or rather a learner, would more readily be placed from his natural position at rest, on to the inside edge, for this reason, that standing with both feet parallel on the ice, and keeping the body upright, it is impossible to retain the centre of gravity, when one foot is lifted, unless the body is shifted over to the contrary side; in short, the mere lifting of one foot, from its weight, makes the learner incline to the inside when the body is kept upright and the balance arranged for both feet. But this reasoning does not stand good for a balance arranged for one foot, for then the inclination to catch either edge would be identical. We can hardly use the expression "leaning off the centre of gravity," because no leaning over can be practical until centrifugal force comes into play, and then the ensuing balance upsets the expression.

Like all other writers, Cyclos advises the learner to avoid practising the inside edge forwards, as, he says, it is never used by good skaters, and he fears it rather impedes the acquirement of the outside, but backwards, he says, it is a different thing; yet he insists upon the learner being able to do the reverse 3 figure, which begins upon the inside forwards; and in the same manner he alludes to the Q figure, of which it forms a third.

Now here we have a proof of its value from one who would no doubt rather have nothing to say in its favour, but who, when he wishes to write about any extension of the art, finds it cannot be dispensed with. But in the last edition of his pamphlet on the Art of Skating, he confesses himself a convert to our notion as to the beauty and use of the inside edge. As a fact, many skaters persist in ignoring the inside edge simply because they are wholly incapable of skating it, as it is now fully acknowledged by all figure-skaters that skating a roll either backwards or forwards is a very much more difficult feat on the inside than on the outside edge.

In the great modern skating winter of 1860–61, a letter appeared in the *Times*, the writer of which said in substance that the best and quickest way to learn skating was to walk forwards, alternately crossing the feet,—this is what is known as the "cross roll," or "cross outside,"—as by this means the outside edge would be acquired in a remarkably short time; and of course it has become an established opinion amongst most skaters, especially those of the old school, that when the outside is acquired, all the other movements are mere trifles!

Now the act of walking on the ice in this crossed position is extremely difficult for a beginner, and, when the difficulty is mastered, the outside edge will doubtless be acquired. The great advantage in this method is that we get a "prop," but we get into a bad habit also, for the style of skating by this method can be nothing else than excessively small and cramped, because the stroke from the cross is very feeble with the inexperienced skater, and the arcs or curves very small and contracted. We do not hesitate to say that, if any skater thinks he will learn the art, as it should be learnt, by this method, our experience tells us he will be grievously disappointed. There is no royal road to the acquisition of it; plenty of practice, accompanied with the necessary nerve, intelligence, and perseverance, and carried out by directions framed from the principles which we have already described, will alone enable the learner to attain the summit of excellence in the shortest possible time, according to his natural abilities, whilst a foundation is laid upon which may be built anything novel and difficult.

Since the above was written in the year 1869, roller-skating has been introduced, and, as will be seen in the chapter devoted to roller-skating, it is a very great help towards the acquisition of ice skating.

We admit that without any theoretical knowledge a very, very small proportion of skaters will take to and learn this art intuitively, but the immense number who never can do so unless instructed is apparent; for, as Cyclos has well observed, "To see really good skating is the best teaching; but as a general rule that is only to be seen in the larger cities, where the greater field of emulation has produced it. Country skaters, from never seeing it, are not even aware of what can be done on skates." This is undoubtedly the case; though, as we have before stated, we are indebted to a provincial town, viz., that of Oxford, for the improved form of skate-iron, which has doubtless done much to render figure-skating what it is at the present time.

There are, moreover, very few figure-skaters of any pretensions at all, in this country at least, among the lower classes, notwithstanding that as a class they excel in most of the manly exercises, including rapid skating. Yet, when we come to figure-skating, we shall not fear contradiction when we assert that the most graceful and finished skaters come from the better educated, or the middle and upper classes, the clergy and military, and gentlemen belonging to any of the higher professions, being at the top of the scale; very few of the lower class, as we descend the social scale, knowing more than to "go ahead;" and when one of these worthies reads the doings on the. ice in the daily papers, he doubtless gets somewhat mystified with "waltzes, quadrilles, polkas, serpents, pedlar's acres, and birds of every description!"

It is, of course, a great advantage to begin to learn to skate when very young, and get over the tumbling when tumbles don't break bones. But a child can be taught little more than forward skating. In advancing boyhood we may attain the outside edge and rudimentary figures; but our united experience tells us, that it wants the full muscular development of the grown man to become a first-rate figure-skater. Therefore let no one think he is too old within reasonable limits to learn the art. A friend of one of the writers, who did not put on a pair of skates until he was thirty years of age, became, by dint of perseverance, a very fair figure-skater.

In concluding our remarks, we would observe that there is such a strong desire to develop the theory into practice, that the learner will find a sprinkling of venerable skaters on every favourite resort. Therefore we have no need to urge him to learn, for it is quite true of this art what a brother writer has said, "Non-skaters have no idea of the fascination," &c.

We, however, add this advice:—The exercise is severe; it searches out every nook and cranny that contains a muscle in that most marvellously animated machine, responsible man, who, fearfully and wonderfully made as he is, must guard against sudden chills; it is only when the would-be skater is in condition, induced by a mild course of training, consisting of walking exercise and a simple yet generous diet, that the full glories of this splendid exercise can be appreciated.

CHAPTER III.

GENERAL DIRECTIONS.

SKATING, then, is the art of balancing the body and propelling it over the surface of ice by the action of the feet, when fitted with a pair of one of the various kinds of skates we shall presently describe, which enables the skilful wearer to travel forwards or backwards at a slow or rapid velocity, or to describe a variety of arcs, circles, spirals, serpentines, and other figures and letters in either direction, and either singly or in combination with other skaters.

Our art, when thus highly elaborated, is called "figure-skating," or "figuring," for the reasons we have already stated in the first chapter; and it is that elevated branch which is more especially treated of in this work.

Should the adept condescend to peruse it, we can only hope to recall pleasurable reminiscences of difficulties surmounted, and to set before him others with which he may be unacquainted. He who is less advanced, yet able to skate tolerably well, will, we trust, derive no little amusement and instruction from practising the combined figures, which will be found fully described. This very sociable and agreeable arrangement of figures is well worthy of being much better known, because it so greatly improves the style of the skater, and shows him, good skater as perhaps he may have considered himself when skating singly, how deficient he is in that accuracy of movement which is the test of his really possessing the command of his skates. From a course of combined figure-skating, he receives a polish and finish that can be attained in no other way, and is prepared to persevere with and overcome the *greatest difficulties.*

But it is mainly for the beginner that this work is written, in order to teach him how to set about learning this art thoroughly, taking him gradually from the simple to the most difficult movements, giving him a set of general directions to which he may resort for information as to attitude, and the application of the impulse and momentum obtainable, &c., and superadding additional information when the description of each movement requires it. Therefore it is imperative thoroughly to acquire the information contained in the general directions, in order that such may be practically carried out on the ice; and it would be well to turn the information so acquired to good account by practising with roller skates preparatory to studying the "real thing" on the ice, as on such preliminary knowledge will the progress depend. How many thousands of youths are annually upon the ice who, although anxious to progress, are quite ignorant of the means they should adopt in order to place themselves in attitude, &c.! Their desire to learn enables them to effect some progress, but this is generally in a wrong direction; and being without a guide to direct their steps, they frequently acquire bad habits that years of sound practice will hardly eradicate.

There are certain characteristics in each skater partaking most strongly of the temperament of the man. All cannot be gifted with the "poetry of motion," which imparts such charming grace. Those who are the fortunate possessors of it will certainly find the path to success a shorter one than those who have it not. But the latter must redouble their efforts to try what careful practice will do in eradicating anything that is ungainly, inelegant, and awkward.

Acting on what experience has taught us, we shall not follow the well-beaten track of other authors who have written upon skating, as to what ought to be learnt in succession. Our pupil will have to go from the simple to the most complex and difficult figures upon a systematic plan, and in doing this we have already boldly claimed for the inside edge an honourable place in the system, and in order to make it serviceable have given it an attitude which brings it very near in appearance to the outside. Of course we can hardly hope to convert all old skaters to our views, but still there may be many who would like to pursue their illustrations of this art to the end: among such we expect converts, for the *whole* art cannot be acquired without its aid. We have the greatest faith that learners, and even many adepts, who choose to follow the teachings contained in this work, will agree with us that to banish the inside edge from figure-skating is a mistake.

The acquisition of what is contained in the ninth chapter ought to transform the learner into what is generally understood by the terms "a good skater." The subsequent chapters ought to add vastly to this reputation. In the tenth chapter will be found a description of certain two-footed figures which come to us from the Canadian rinks, and which, from their great elegance and the delight they afford the performer, are well worthy of being carefully studied. In the last chapter we have thought it advisable to shunt, as in a kind of literary siding, all those nondescript curiosities of our art which do not come up to the standard of our ideas of first-rate movements, yet are useful to the skater by tending to educate his feet and give him confidence.

We do not therefore in any way wish to prevent the reader from learning them in his by-play, as some are very curious and difficult, and every difficulty overcome is a help to the surmounting of a greater difficulty. We often see the very best skaters occasionally "larking" with some of these curious figures.

In this country it is very unusual to get the amount of practice that is undoubtedly necessary; and therefore the skater must take advantage of every opportunity that occurs, and stick to his practice manfully. A beginner often works hard at a particular figure all day, and on leaving off seems to have made very little progress, but the real practice is sure to have done him good service, and probably the next day he will find the figure that yesterday seemed impossible, come with the greatest ease.

In addition, the enthusiast must turn out even before daybreak. A youth may thus get in the morning an hour and a half's practice without taking him away from his regular duties, on his return from which he will get the best part of an hour's *day and twilight*; and as for a moonlight night, why, that is delightful! and even by artificial light skating can be carried on quite easily. He will then appreciate those entire days' skating which somehow or other he is sure to get. To the man who has plenty of time at his disposal we say, "Enviable being, make the most of it." The schoolboys have a good chance in the Christmas holidays, and we all know how frantically they rush to the ice. To sum up, although there is comparatively very little skating in this country, we can speak from our own experience, "When there is a will to learn, there is a way to acquire."

ARTIFICIAL SUPPORT.

We think, as a rule, all artificial support is a mistake, provided that the ankles of the individual learning to skate are tolerably strong and his temperament courageous; for, though the tyro may at first tumble about a good deal more without than with artificial aids, he will certainly make greater progress, for his very slips, starts, and scrambles, being errors, naturally cause a corrective power to be set up, and the education of the skater without artificial support will be, under the favourable constitutional circumstances alluded to, much more rapid than with it. We refer, however, those who from constitutional weakness of the ankle require such aid, to the ladies' chapter. Roller-skating has introduced the practice of aiding a beginner by taking hold of his hands sideways, and this is certainly a great assistance, provided the would-be instructor is sufficiently strong on his skates to hold up his pupil during the first slips and struggles he would be sure to make.

THE DRESS OF THE SKATER.

In considering how a skater should be attired, we have to observe that fashion and custom have not sanctioned, as in other athletic pastimes, a special dress for him, the probable reason being that men rush to the ice before and after business hours, and any peculiar (though comfortable) costume would thus be inconvenient. We need hardly remark that the white *cravat, swallow-tailed* coat, and pantaloons (the old dress of *the Skating Club)* are things of the past.

We may also remark that when a man is about to take violent exercise, no matter what the temperature may be, he, if possible, divests himself with great eagerness of all clothing likely to impede him. Numerous are the instances of this fact, from the peaceful rivalry of rustic games and sports to the deadly land and sea fights. Whilst some, perhaps, may regret the want of a more suitable dress for skating in than that in daily use, they cannot deny that its absence adds much to the popularity of the art, as it enables all to participate in it. Whilst conforming, then, to the fashion of the day, let the skater take care that his clothes are well fitted, so that the action of the arms and legs is not interfered with. The coat, such as the Beaufort, with rounded skirts and buttoned across the chest to prevent the flapping of the said skirts, will do very well, and better indeed than the frock coat, though, perhaps, not so well as the dress coat. We also recommend a warm vest, flannel shirt, and under jersey, with the trousers tight round the waist, whatever fashion is given to the legs, ordinary warm drawers, and socks of cotton, merino, or silk. The overcoat should be used for coming and going, and standing still, but not when skating, as it is not only unnecessary but apt to make the skater so warm that standing still for a few minutes even may give a chill that will cause a cold. The tall hat which is "*de rigueur*" on the London waters is a great nuisance, and the leverage it presents to the wind has frequently the effect of destroying the truth of curves, but as the slaves of fashion we are, we suppose, chained to it.

We must absolutely forbid the use on the ice of the walking-stick, as it is utterly useless as an artificial support for the learner, and excessively dangerous to every one in his immediate vicinity. We cannot conceive how any skater can take delight in skating about with such a thing flying in all directions. It is only useful when hockey is in the case. We now come to

THE BOOTS.

We prefer, after numerous trials of all kinds of boots, those of the lace-up kind, with good stiff, or even double, upper leathers, and moderately thick sole and low heel. These certainly support the ankle far more than any other sort, and permit easy adjustment. A clever bootmaker will turn them out without being clumsy, and if, in wearing, the leather lace should cut the instep, a little pad of flannel, or a piece of spongeo-pyline cut into the shape of a tongue, or an extra leather tongue, may be serviceable. This tendency to gall the instep can be prevented, however, by well using the boots previously to skating; and when they are quite supple and worn to the feet, they should, if somewhat the worse for wear, be put in thorough repair, and kept for the skating season; and when laid by, let them be dressed with one of the numerous preparations in vogue for rendering the leather soft and pliable. If boots at any time from being thoroughly wet should become very hard, "Allen's" dubbing will be found very good, as, while rendering the leather soft and waterproof, it does not prevent the boots from being polished with blacking in the ordinary way.

The sole of the boot should not be too broad, as in leaning over on the edges the side of the boot may come in contact with the ice. And for the same reason the wood of the skate must not be quite so wide as the sole, and it must be thinned off towards the edges. In former days, when our experience was less, we have had terrible falls from neglecting to see to this.

The nearer one gets to the ice the easier it is to skate, as there is less strain on the ankle; therefore, again, the sole of the boot should be only moderately thick, and the iron of the skate and the woodwork should only be deep enough to prevent the edge of the foot from touching the ice when on an edge. Although great advocates for broad-soled boots for walking, we cannot shut our eyes to the fact that for skating the sole should not be broader nor thicker than is absolutely necessary for the stability and rigidity of the skate when connected with it, and for the comfort of the skater. Again, if the skates are fastened with the modern clamps, instead of straps, it is absolutely necessary that the boot should fit tight to the foot, otherwise the foot "wrings over" in the boot when the edges are being skated.

THE SKATE.

The skate most generally in use is made after this fashion : a wooden bed, hollowed out to fit the boot as closely as possible ; three small spikes in the front part of it to enter the sole, and a good screw or spike to go into the heel; the iron of the skate extending but a trifle beyond the length of the foot, and rounded fore and aft. Its curve we will describe presently.

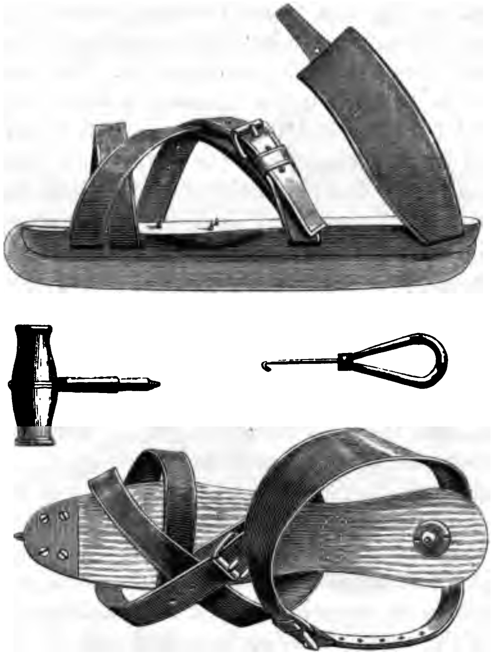

Fig. 3.

The fastening may be one strap through the wood under the heel, across the instep, and one long strap passing under the wood, and crossed over the foot in the manner shown in the accompanying engraving of this skate (Fig. 3). There are a variety of fastenings, however, but the reader must remember, in exercising his discretion (if he thinks he can find a better method than the above), that the object is to firmly attach the skate without cumbering the foot, and also bearing in mind that if, contrary to our advice, he intends to skate in a Wellington, or other boot of like light character, he must have more straps in order to fasten both it and the skate securely on.

It is here that the great advantage of the lace-up boot is apparent, for it permits the straps to be reduced to a minimum, or even, as we shall shortly have an opportunity of showing the reader, dispensed with altogether. The wood of the skate as represented in Fig. 3 is wrong in shape, inasmuch as when fitted to an ordinary boot with high heels, the skate-iron and the foot inside the boot will not be parallel. The heel of the boot should be lowered, and, if necessary, a step, as it were, cut in the heel of the wood of the skate. If it is found that the lowering of the heel and the cutting of the wood away are not sufficient to get the foot parallel to the skate-iron, the toe part of the wood must be raised. This is very important, and is not attended to in ninety-nine cases out of a hundred when wooden beds are used. Unless the foot be parallel to the skate-iron, the same facility of skating either backwards or forwards cannot be obtained, as, supposing the heel to be high, the weight is thrown on the toe, and backward skating then becomes more easy than forward; and this accounts for the statement frequently made by good skaters, that they skate stronger, *i.e.* with greater ease to themselves, backwards than forwards.

Another kind of skate (Fig. 4) has a piece of iron, about half an inch broad, and as wide as the sole in its greatest breadth, fastened across the wood in the front part of the skate. This iron is turned up and in at the ends, and catches on the outside of the sole, or, as it is technically called, the "welt" of the boot. The foot is pushed into the clamps, so that the toe takes its proper position with regard to the toe of the skate. This iron is called a clamp. Instead of the screw, there is a blunt spike with a notch fitting into an iron plate screwed into the heel of the boot. This clamp does away with the forward straps and the three little spikes; there is the heel-strap, however, loosely buckled in case of the iron coming out of the notch; sometimes, also, there is a toe-cap. This skate is easily and quickly put on, but it has the defect that the boots must be made and kept expressly for it, and must, moreover, be protected by goloshes when used for walking to the ice, as if the sole of the boot get worn, then the clamps do not bite.

Fig. 5 is a skate that has the iron thinned and bent up at the back. It has a hole in it, and it hooks on to a short hook that is firmly screwed into the boot at the back of the heel. There may be a heel-strap for additional security, but it hardly wants it. The broad divided toe-strap is the front fastening. This skate is easily put on, and has been very highly spoken of by those who have used it. The straps shown in the engraving are furnished with buckles having tongues. There is a new buckle without a tongue, which is infinitely better, as no holes are required, and the straps can be tightened the eighth of an inch if necessary. These buckles were invented by an American, and are known as Fogg's Patent Buckle.

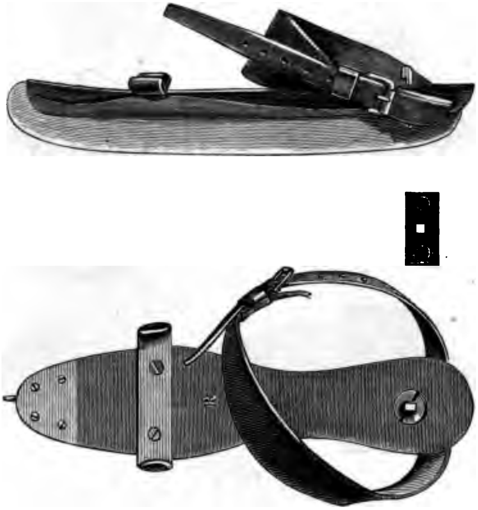

FIG. 4.

We now come to a description of skate (Fig. 6) which we can strongly recommend, from the personal experience of one of us, as being most suitable for those who, having a business, calling, or profession to attend to, are yet anxious to get on to he ice at every spare moment.

This skate has, at its heel-end, instead of a screw, a piece of iron shaped somewhat as a T (and keyed so as to prevent its position from being altered), that it can be locked into a corresponding hole in an iron plate, which is to be firmly screwed and let into the heel of a good strong lace-up boot. The hole in the said iron plate is to be plugged up with tow or a strip of strong linen cloth when not in use, which is easily removed by a pocket button-hook, the hook part being broken off and ground to a point, or still better, perhaps, by a little steel instrument of the nature of the crochet hook, but very much stronger, shown in Fig. 3. This plugging is now rendered unnecessary by the adjustment of an iron valve cover, which is thrown back when the skate is to be fastened on. The extra cost of this valve cover is six shillings. No heel-strap over the instep is necessary; a broad toe-strap, divided so as to make two ends, and each buckled over and across the foot, is quite sufficient, as the three little spikes are *underneath.* The boots can be worn during the frost in *the daily occupation;* and what with the absence of the heel-

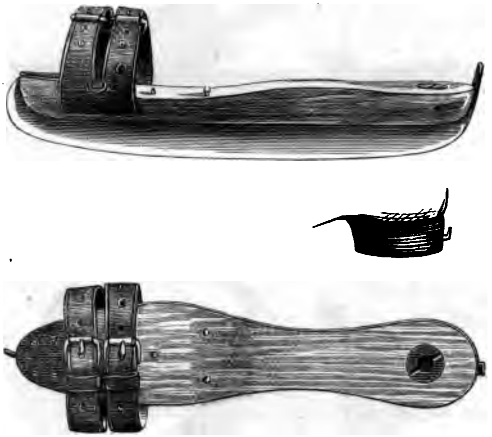

FIG. 5.

strap, and the simple fastenings of this skate, we have not yet met its equal for general convenience. One of the writers used such a pair continuously during the severe frosts of 1860-61, and was on the ice at least sixty times, and that with a degree of comfort which he had never experienced under any other system. The only objection that can possibly be urged against this form of fastening is that, having straps over the toes, it is not quite so neat as the fastenings without any strap at all.

Messrs. Barney and Berry (now E. H. Barney and Co.), Springfield, Mass., in the U.S. of America, have invented a skate similar in plan to the last mentioned, but a decided improvement on it, inasmuch as it dispenses with the unsightly toe-straps. It is made entirely of metal; the heel is fixed by a T-plate arrangement similar to the one last described; the toe is fastened by clamps which are tightened to the welt of the boot, after the heel has been adjusted in the T-plate, by means of a key which works a screw, drawing the clamps together.

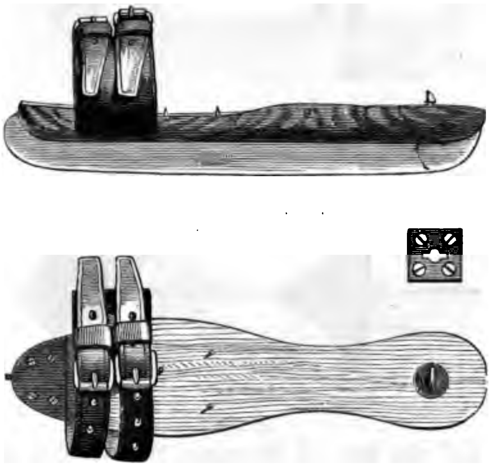

Fig. 6.

The T-plate has been admitted as the best kind of fastening *for the heel,* as the clamps are for the toe. With the fixed, clamps for the toe the T-plate cannot be used. By Messrs. Barney and Berry's ingenious plan of having the clamps work with a screw, so as to enable the boot to be placed in them when they are loose, and then tightening them to the welt by means of a key turning the screw, the difficulty has been obviated. Messrs. Hilliard, of Glasgow, have patented a skate very similar to Messrs. Barney and Berry's.

In the skate (Fig. 7), all straps of every kind are done away with; the clamp described in a previous page is the sole front fastening, and the heel of the skate, on its upper surface, is fitted with a revolving T with a spring catch to prevent its turning. The skate is put on by pushing the boot into the clamp until the T enters the hole made to receive it in the heel; the T is then revolved a quarter of a circle by means of a small projecting lever, the spring catch drops into its place, and all is secure. Mr. Hill has lately improved this skate by adding to the toe a framework somewhat similar to that of the "Acme" skate. In consequence, the cost is increased to the extent of six shillings.

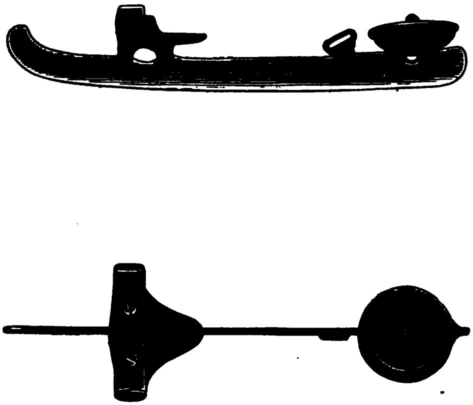

FIG. 7.

The boots, we think, will have to be protected with the *golosh for the* sake of the clamp and the ingenious valve *over for the hole* in the heel; and we think that they must be stout also, because all the fastenings are attached simply to the sole and heel of the boot.

Another skate without straps (Fig. 8), known as the "Acme," and now familiar to most skaters, comes to us from Halifax, Nova Scotia. It has the clamp, as usual, but this is most ingeniously made with a horizontal adjustment; enabling it to be fitted most accurately to any boot. At the front part of the heel a chisel-edged flange is pressed in by a powerful lever adjustment which also tightens up the clamp: altogether a most ingenious arrangement. The entire skate is of metal.

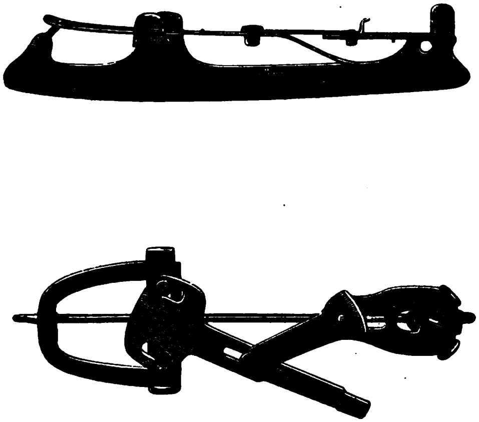

FIG. 8.

The form of the Acme as at present used is rather different from the representation given by Fig. 8, but the principle is the same.

The Acme is decidedly a good form of skate, but great care should be given to the adjustment of it to the boot in the first instance. At the back of the heel on either side there are two clamps, with rough sides, which, when the lever is shut "home," are forced into contact with the outside of the back of the heel. In consequence of the heels of most boots being smaller at the base than at the top, and so sloping towards the ground, these clamps do not hold, and one hears continual complaints *of the skate* coming off; but if the heels be made with straight sides, or if a sloping heel be filed straight at the point where the clamps hold it, the Acme will never come off.

An indentation should be made in the front part of the heel where the chisel-shaped flange attached to the lever is forced in. Unless this be done a firm grip is not obtained, and the corner only of the flange or spike is driven into the heel, and this causes the skate-iron to bend or "buckle."

Many persons object to the skate being fixed simply to the sole of the boot, as such a fastening causes the boot to feel as in a jack-boot, the weight of the skate always pulling at the boot; but the skater soon gets accustomed to the feeling, besides, a small strap in addition, over the instep, remedies this, and, if skating in elastic-side boots, becomes a necessity.

A word here as to skates entirely of metal. Thirty years ago one of the writers had a pair made from a design of his own, and his experience of them, as compared with those having a wooden bed, compels him to decide on giving the preference to the combination of wood and iron, as absorbing the vibration and jar which is peculiarly observable in the skate formed entirely of metal, the metallic ring of which can be easily distinguished.

Skates made entirely of metal are almost always fixed to the boots without straps: hence they are very little trouble to carry; but as in these luxurious days most skaters change their boots before and after skating, there is no more trouble in putting on a pair of boots with skates attached, than there is in putting on boots without skates. Appreciating the skates which are fastened to the boots without straps (from the neater appearance presented), and wishing to have something more firm and rigid than the revolving T-plate or the lever adjustment which is attached to the Acme, one of the members of the Club, being an advocate for the combination of wood and iron in skates, had a pair made similar to Fig. 4, with the exception that there existed no hole in the wood for a heel-strap, which was rendered unnecessary by the following plan. The screw which goes through the wood and fastens the skate-iron to it was made with a flush head, and sufficiently long to be screwed through the heel of the boot, through the wood and into the skate-iron. The head of the screw was of course counter-sunk in the inside of the heel of the boot. This fastening is perfect. There is no chance of its coming unfastened; the advantage of having wood between the foot and the skate-iron is retained; and when the irons require grinding, their removal is instantly effected by taking out the heel-screw and withdrawing the iron.

Most enthusiastic skaters have two or more pairs of skates, so that in the event of one pair "coming to grief" during a frost, they can fall back on another pair. A better plan than this is to have two pairs of irons made to fit the same woods; as the same woods and boots are worn, the strangeness caused by using a different pair of skates is done away with.

It is also a good plan to have a pair of irons made narrow for use when the ice is extremely hard, but these are matter that the ordinary figure-skater will hardly care about.

Messrs. Thornhill and Co. of Bond-street furnish a very good skate, which they call the "Mount Charles" (see Fig. 9). It has the skate-iron fastened permanently into the sole of the boot. This is a very simple method, and has the advantage of being one of the lightest skates made. The price Messrs. Thornhill charge is 35*s*.

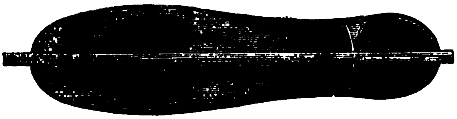

Fig. 9.

The next skate on our list is a patent one, which has now for some years appeared in the shop windows; it is entirely metallic, with an open toe-cap and bed, and adjusting screw at the heel, which projects slightly behind, by means of which the skate is tightened longitudinally, and two spikes enter the front part of the heel (underneath the instep, as it were), on the same plan as the Acme skate.

It is ingenious; and if the projecting screw is altered, and the heel end of the iron rounded, we cannot see why it should not keep in the rank of others of its genus. The description of this skate seems so plain that we consider it unnecessary to *give an engraving* of it.

The last skate on our list (Fig. 10) is an invention of Messrs. Thornhill and Co., and as it appears well adapted to the use of ladies, as it is light and elegant, we have fully described it in the ladies' chapter.

Skates that are used exclusively for running are made longer in the irons, which latter approach more nearly to the flat surface than to the curved one we shall presently describe; the irons are very thin; the ends beyond the toes also turn up, and often project very much in front, whilst the heel is left almost without support. We need scarcely say that these are useless for figure-skating; and if they have any superiority for running, it arises from the fact that, being flatter, and the weight of the body being principally on the toes in fast skating, the friction is by their construction somewhat reduced.

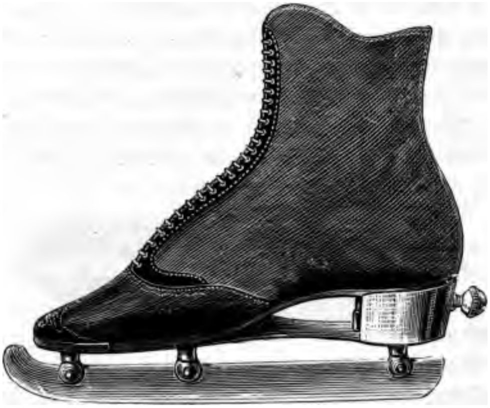

FIG. 10.

Altogether, then, there is a vast variety of skates, varying as much in appearance as in price, from 3*s.* 6*d.* to 56*s.* (including the boot fittings, but not the boots); and, considering that the outfit of the skater costs so little, it is good policy to avoid purchasing those of so low a price as would exclude good materials and workmanship. We advise the learner to begin with a sound ordinary pair of the character of those first described, and which, if they are country made, may be had of most makers for 12*s.* to 15*s.* or more, and, when he finds himself becoming a skater, to fit himself out with the special skates and boots of our fifth description; that is, if he wishes to have skates that are not fastened entirely to the sole of the boot. If, however, he is willing to carry the typical black bag which figure-skaters seem always to affect during a frost, he can dispense with straps altogether, and fit himself out with a pair of skates attached to the boots in one of the numerous manners above described, and these, if fairly used, will last, as we have experienced, for years.

All the engravings we have given of skates are from photographs of those lent to us for the purpose by Messrs. Hill and Son, of the Haymarket, and by Messrs. Thornhill and Co., New Bond-street, London.

THE FORM AND CURVE OF THE IRONS.

Having noticed the laws of motion, the nature of curves, and their effect upon the skater, the question next arises, what kind of skate-iron ought he to be furnished with to carry out his evolutions? Is there any proper geometrical form for it? When we reflect on the various positions of the skater's body, generally more or less inclined, whilst progressing, rotating, changing direction, and even acting as an inverted pendulum, we see that we have before us a proposition that has never yet been mathematically solved, if indeed it be capable of solution.

Since the origin of figure-skating we have been groping our way in the dark assisted only by the light of experience, which enables us to put forward the following propositions:—

The nearer the foot can be brought to the ice, the less the strain on the ankle.

The narrower the iron, the less inclination required to catch the edge.

A narrow iron curved to a very large radius, say twelve feet, appears most suitable for describing plane curves.

A wide iron, curved to a radius of from three to six feet, appears best adapted for curves of compound motion, such as loops; for it is certain that curves and loops are more easily learned on a highly curved skate, and a wide iron undoubtedly *facilitates the formation* of the loop by rendering it necessary, in order to catch the edge, that the inclination of the body should be greater, and this is a desirable position for learners of the cycloid curves.

A certain hold of the skate-iron on the ice to prevent slipping being necessary, a certain amount of cutting into its surface is entailed. The less the cutting-in, the less the friction; therefore this must be reduced to a minimum. The amount of cutting-in is governed by the width and curve of the iron, the weight of the skater, and the condition or density of the ice.

But as the movements of the skater are a combination of various kinds of curves connected by turns, we require a skate-iron to be so formed as to ensure successful action in both movements, and this can be best attained by a skate ground to a medium radius.

If ice were always of the same density, the width of the iron might be ascertained with certainty (having regard to the weight of the skater) by means of careful experiments; but ice is always varying in density, and what the exact width should be which would be suitable under all circumstances is still a matter of uncertainty, although in this country a quarter of an inch is considered the most useful. With regard to the curve of the skate-iron, it seems to be generally agreed that a radius of seven feet is the best. Skaters who understand the principles which govern our art may do a great deal for it by experiments carried out with a view to elucidate the true form and curve of the skate-iron. We have now experimented for some years on skates of nine feet radius and irons one-eighth of an inch thick, which have several advantages and are quite practical.

In bygone days some figure-skaters had the irons made with a bulge towards the ball of the foot, supposing that this bulge gave facility in turns; but it has long since been discarded, and the irons are now usually made the same thickness from toe to heel.

Towards the end of last skating season Captain Dowler, a member of the Skating Club, astonished the other members by bringing to the club ice a skate made with *concave* sides. Several of the members tried it, and it was obvious, not only *that it worked well*, but that all movements were skated with *very much greater* ease and power on it than on the old form of blade. Several members gave it a good trial, and were so impressed with its merits that Captain Dowler was persuaded to go at once to a patent agent and file a specification of his invention. In this he says, "My invention relates to the construction of skate-blades, in such a manner as to facilitate their use, especially for movements in curves. For this purpose, instead of making the blade with flat or straight sides, as it is usually made, or with convex sides, as it has been sometimes made, I make it with concave sides, so that the blade is thinnest at or about the middle of its length, and widens out both ways towards the ends, the increase of thickness resulting from a gentle curvature to which the concavity is formed." And further on he says, "The skate blade is hollowed out at the sides so that it is thinnest at or near the middle of its length, and swells out in thickness with a gentle curvature towards the ends. Owing to the vertical curvature at the lower edge of the blade, the skate when vertical will rock or tilt lengthwise, and also if it had straight sides, and still more if it had convex sides, it would rock or tilt lengthwise when inclined from the vertical; but by making the sides more or less hollow or concave according to my invention, there will be a diminution of such lengthwise rocking or tilting movement when the skate is inclined from the vertical, as for running in curves—that is to say, there will in such attitudes be a greater portion of the length of the blade in actual or approximate contact with the ice, and this is practically found to give increased stability as well as facility in traversing curves."

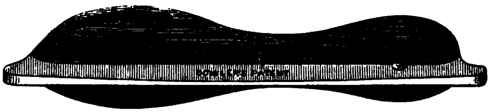

FIG. 11.

As a fact it practically comes to this: that the new form of skate-blade gives the figure-skater that which he has so long desired, namely, the increased bearing surface and absence of friction which a nine or ten foot radius would give him in skating curves, combined with the facility of turning given by a *skate having* a seven foot radius; and this will be readily seen if the skate be placed in a vertical position. The seven foot radius to which most skates are ground enables them to be pivoted easily; but immediately the skate is deflected to such an angle as is usual when a curve is skated, the advantage of the side concavity becomes apparent, as the bearing surface then assumes that of a skate having a nine or ten foot radius. And this is not all; it has another great advantage over the old blade in this way. In skating, one of the great sources of loss of power is the inability of always placing the striking foot at right angles to the gliding foot in the act of striking, and the consequent partial or actual slip of the skate. The concavity of the new form of blade, by affording a larger bearing-surface, in a great measure corrects this slipping, and the increased power thus obtained is quite astonishing. It may occur to some skaters that curves coincident with the radius of the concavity would be rendered easier, but that curves either larger or smaller than the radius of the concavity would become more difficult. As a fact, this practically is not the case, although theoretically it may be correct, and curves of all sizes can be skated with equal facility.[1]

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[1] Quite unknown to Captain Dowler, to whom we must heartily give all credit for his endeavours to improve the skate-iron, I had some years ago made drawings for both convex and concave forms of skate-irons, but of lesser radius than his. I considered them theoretically only, and arrived at an adverse conclusion respecting them, and was in favour of a narrow parallel iron and large radius, which I have ever since used.

Now I think I am correct in saying that as regards the present concave skate it is admitted from practical trials that any concavity less than is occasioned by a radius of twelve feet produces certain defects which indeed must be obvious. So far then, but I cannot say farther, I think my conclusions are borne out.

But it is after the twelve feet or less radius is superseded by one of say fourteen feet or more that the asserted improvement begins, as I now understand it, to manifest itself. I have not yet tried the concave skates, preferring at present to collect the unbiassed opinions of others, many of which are very favourable. Indeed, as this work is passing through the press I have just had a long interview with a good figure-skater, not a member of our Club, and whose sphere of action is quite away in the country. Being a practical man extremely fond of experimenting in skate-blades, his perfectly impartial opinion is so valuable to me that I have thought it right to reproduce it in these pages for the consideration of our readers.

He tried the Dowler-skate, and discarded it after a fair trial, not being *able to get on with* it at all. The concavity might in this case have been *twelve feet, as on re-grinding* it acted admirably, and he now speaks of it *in terms of unqualified* praise.—H. E. V.

The form and curve of the irons are highly important, and deserve this separate notice. The irons are made either entirely of steel, or they are faced with it, and we generally consider the latter the best. They ought to be most delicately tempered to as high a degree of hardness as is compatible with an absence of brittleness. The difficulty of getting the right amount of hardness combined with an absence of brittleness is caused, we believe, by its being necessary to manufacture the skate-blade with the hardest steel, and then by heat to bring down the temper to the required degree of softness; and although placed between two plates of iron during the process of cooling, they are apt to "buckle," or become curved in the process, and this curvature has to be put right by the grindstone; hence the irons should be made sufficiently thick to admit of the necessary reduction by grinding: but it is difficult to get skate-makers to do this, the reduction by means of the grindstone being an expensive operation.

Being ground across the grindstone or lap (that is, at right angles to the run of the skate), the skate-iron becomes slightly concave on the bottom, assimilating it in a slight degree to the fluted skates of our ancestors; whilst the angle (in all skates except those of very modern construction), owing to the wedge form of the iron as seen looking endways, is less than a right angle. The edge thus becomes more acute, and is more liable to become notched or dull by use than the right-angled edges before described. Care must be taken in restoring the edges by means of the grindstone, that they are retained of the same height. Only those who are in full practice can grind skate-irons well and truly accurate, as it is a process requiring a high degree of manual dexterity; but we trust that the mechanical guide above described will come into general use, so that the radius of all skates will be accurate in the future.

The length of the irons should rather exceed that of the foot: one-eighth of an inch at each end will suffice, though latterly skates have been made precisely similar at the heel as at the toe, thus giving greater facilities for going over rough ice when skating backwards. As the eye is unaccustomed to the appearance of these skates, they seem at first unsightly, but practically they are a decided improvement on the old pattern.

Various curves have been given to the irons, but if too great, or too much "hogged," as it is termed, the skater is rendered unsteady, the curves will not be true, and the skating will get small; evils which are by no means condoned by the turns coming a trifle easier. Skates, then, should be selected with irons that are very slightly curved, certainly not more than is given by a radius of seven feet: this we can answer for is a curve that readily clears the ice in turning, and is almost universally adopted by the members of the Skating Club. Walker, in his "Manly Exercises," talks of two feet for the radius! Why, this is greater than the American and Canadian "rockers," which are much too highly curved. It has been suggested that the curve should not be an exact portion of a circle, but rather of the ellipse. With this we do not agree at all. The ellipse certainly clears the heel and toe rather more readily in turning than the exact circle, but the heel and toe are the parts of the skate we work the most, and therefore wish them as near to the ice as is consistent with free turning.

Thus, in selecting a pair of skates, attention should be paid to all these points, and notice carefully taken that the iron is straight, not "buckled," a very common imperfection. It should be ascertained also by the skater whether he can fit them on easily, and stand upright in his natural position without feeling his feet cramped. We think we all wear the heels of our boots too high: surely it is not possible for man to improve upon the design of the human foot. Boots with heels one and a half inch high! If the foot required such an elevation, certainly the Creator would have bestowed it upon His most finished work.[1]

Before we pass on to the practical part of our work, we must not forget to say a few words upon

THE CARE OF SKATES.

Let every one, directly the winter is fairly over, get his skates and boots ready for the next season. As a rule, no one thinks about skating until the frost has fairly set in, when there is a general rush to the skate-maker, and the screw or spike that wanted re-setting, or the irons that wanted re-grinding, cannot be done; or if they can, it is in so hurried a manner that they are almost sure to be badly done.

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[1] The reason such high heels are required arises from the absurd fashion bootmakers have of making boots on lasts that curl up at the toes. With *such a last a high* heel becomes necessary; but if any one will try having *a pair of lasts made flat* at the soles, and the boots made on them with very *low heels, the comfort will* be found immense.

After use, skate-irons should be wiped quite dry, and any symptoms of rust removed with fine emery paper (care being taken not to blunt the edges); they should then be smeared with tallow or oil, the tallow having been first melted and allowed to trickle drop by drop into cold water. This process eliminates any salt that may be in the tallow. If oil be used the best is two-thirds marrow oil mixed with one-third benzine. On applying this to the iron, the benzine evaporates and leaves a thin film of oil all over the iron. If the woodwork has not been French-polished, it is a good plan to rub in occasionally small quantities of linseed oil, whereby it is rendered extremely hard, and does not get so dirty or discoloured. When the wood-work is stained black and polished, the skates at first look extremely neat on the feet, but the staining and polish soon get shabby. The straps should also be wiped, and hung up with weights attached to them until quite dry, and then if necessary, rubbed with dubbin before they are laid up in ordinary.

with a pair of highly-finished skates of his own make was performed with half the amount of fatigue.

In the year 1859 a skate was invented and patented by a Mr. Woodward. It consisted of an iron framework to fit the sole of the boot, to which it was fastened by straps, after the manner of ordinary skates; the runners, which were four in number, consisted of small vulcanized india-rubber wheels, revolving on steel axles, which were pivoted to a bar of metal running on either side of the wheels. The two middle wheels were rather larger than those at the toe or the heel, thus giving as it were a curve to the skate, and rendering it practicable to accomplish turns with considerable facility. The vulcanized india-rubber wheels were better in some respects than the iron ones, as they clung to the boards without any tendency to slip laterally, but they also had disadvantages: for instance, in going on a curve of outside forwards, if the performer should lean suddenly on the toe, the pressure would be too much for the leading wheel, which would be crushed out of shape, and consequently refuse to move round; and the skater, being on a curve, and therefore leaning over, would either fall or have to save himself by jumping on to the other foot. Woodward's skates, although being far from perfect as regards workmanship, were still a great improvement on anything of the kind that had preceded them.

We now come to a class of roller-skates which caused a perfect mania for skating both in the United States and here.

They are invented by Mr. James L. Plimpton, of New York, to whom the greatest credit is due for the perfect mechanical construction which they exhibit. The Plimpton roller-skate is entirely different in its construction and operation from the straight-running rubber roller-skate above described (Woodward's patent). A comparison between a toy watch and a chronometer would perhaps illustrate the difference of their relative merits.

These skates are now so well known that a description of them is superfluous. The principle of Mr. Plimpton's skate is the convergence of the wheel axles to the side on which the *skate is rocked* or tilted, so as to run the skates in a curve, and *the means he* uses for effecting these motions are two inclined axis connected with the foot stock. His principle being known, it was possible, by means of mechanical equivalents, to make skates having a similar motion with, apparently, to the uneducated, quite different methods, and the success of the Plimpton skate having stimulated invention and ingenuity, it is quite astounding to contemplate the numbers of patents taken out (some six hundred) all professing to be original inventions, but we doubt if a single one of these patents would have stood the test of inquiry in a court of law. The ingenuity of mechanics appeared to be stimulated in the direction of evading the Plimpton patent roller-skate rather than in inventing anything new.

Mr. Plimpton very kindly furnished us in the year 1874 with the following information as to the relative resistance of ordinary skates on ice and roller-skates on boards. He says :—"I have delayed writing to you, hoping that ice might again form sufficiently strong to enable me to verify and complete certain experiments made long since, for the purpose of explaining the difference between the operation of the common ice skate and that of the guidable circular running roller skate; but as the 24th of March is the latest date on which we have been favoured with ice-skating in New York for the last twenty years, I have given up the hope of having more ice this season; therefore in writing to you to-day I am obliged to give you the result of experiments made by others, and as the temperature of the atmosphere and consequent condition of the ice at the time of the ice-skate trial cannot now be ascertained, the test is deficient, as definite authority, although sufficiently accurate to show the relative difference in the operation of the skates, and also sufficiently accurate to enable you to judge correctly of the relative merits of each, and fully accounts for the difficulty experienced by skaters changing from one to the other.

"In the accompanying drawing (Figs. 12 and 13) the figures represent in pounds and decimals of pounds the resistance of each skate when properly loaded—

"First—to being twisted from its course.

"Secondly—to being moved sideways.

"Thirdly—to being moved lengthways.

"By comparing the figures it will be seen that the ice-skate can be *twisted* from its course when sitting upright some seven times easier than when the runner is inclined so as to cut a groove in the ice; while the roller skate offers nearly the same resistance, whether the foot of the skater sit upright or is inclined; and upon an average it requires some ten times more force to twist the rollers than the ice-skate: therefore, unless the roller-skate is first properly placed before the weight is put upon it, no swing or jerk of the body can force it into position or force it from its course, while the ice-skate may be easily forced into position or forced from its course at will; besides, the resistance offered by the ice-skate to being moved sideways is occasioned by the inclined runner cutting a groove in the ice, and is some ten times greater when the runner is inclined to an angle of 30 deg. than when the runner is upright. Again, the greatest resistance that the ice-skate encounters in the direction of its length, is occasioned by the constant cutting or wedging off of the particles of ice, and this resistance, as *well as* the resistance sideways, is constantly varying according

Ice Skate on smooth ice with a load of 100 lbs.

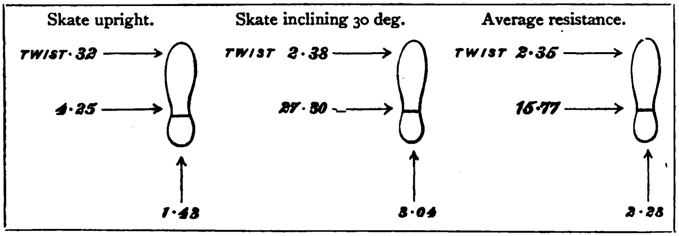

Fig. 12.

Roller Skate on hard pine floor with a load of 100 lbs.

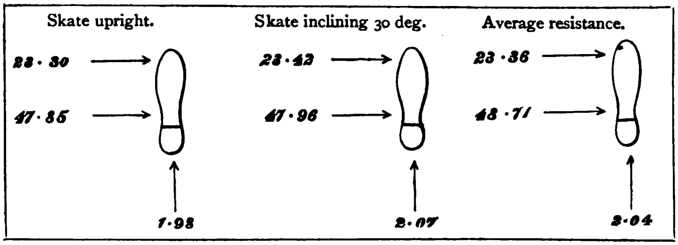

Fig. 13.

to the inclination of the runner, while the resistance of the roller-skate in either direction remains nearly the same, whether the skater's foot is upright or inclined. Hence it follows that the operation of the ice-skate seems variable and uncertain to the roller-skater, while the roller-skate seems stiff, unyielding, and unmanageable to those accustomed to ice-skating."

As the inclined axis on which the wheels "cramp" or turn are in the centre of the skate, the movements of the skater on boards are precisely similar to those of the skater on ice, the rocking foot-board enabling the body to assume the necessary inclination when skating curves. The balance also is similar, the point of friction only being altered.

Good ice-skaters are usually under the impression that they can at once perform their accustomed evolutions on these roller-skates, but a trial soon convinces them of their mistake.

The first sensation over and above that of utter helplessness is, that the toes *will* turn in, and this is caused by the performer inclining his ankles inwards, which has the effect of cramping the wheels so as to cause the toes to point inwards. Of course when the balance is once acquired the practised skater on ice will make greater progress than the novice.

The wonderful strides that have been made in figure-skating in the last two years may be ascribed almost entirely to practice on roller-skates, and so great a help do we consider it towards acquiring skill on ice, that we have devoted a chapter to describing the means of acquiring skill in figure-skating on rollers, as we are convinced that any one who is a good roller-skater can readily become a good ice-skater. While the mania was at its height, rinks were built in almost every town in the kingdom, and these, although partly deserted, still exist, so that practice can always be obtained.

CHAPTER V.

ROLLER-SKATING.[1]

SOME five years ago we received from Mr. Plimpton a pair of his roller-skates, and in sending them he assured us that, when we had acquired something like proficiency in their use, we should enjoy the same pleasure from skating on them as we then did from using ice-skates. We need not say that we were at the time quite incredulous; and doubtless there are thousands of ice-skaters who have tried the rollers some half-a-dozen times or so, who will be equally incredulous when we now assert that the attainment of skill and proficiency on the roller-skates affords as great pleasure as the acquisition of similar skill on ice. There is one drawback to it, which would hardly suggest itself to any one at first. It is this: You can skate on rollers whenever you like. One of the great charms of ice-skating is its infrequency and the doubt of its lasting, causing skaters to work hard; and persistent work means improvement, and improvement in any pursuit means pleasure.

We always thought that practice on rollers would be of great assistance on ice; but we were not prepared to find that any difficult movement acquired on rollers could be skated with hardly any effort on ice. The long winter of 1878 has, however, clearly demonstrated the fact. Hundreds of skaters tried ice for the first time that year, and such of them as had learned figures on rollers were able in a very short time to skate the same figures on ice. How is it, then, seeing the thousands of "rinkers," that one does not see an improvement in the great mass of skaters on ice? The answer is that, of the thousands who rink, not 10 per cent. know how to do even an outside edge properly. Figure-skating is much more difficult on roller- than on ice-skates. We estimate that twenty hours' practice is requisite to give a skater on rollers the corresponding amount of skill which one hour's practice on ice would command; but when a difficult movement on rollers is mastered, the satisfaction is proportionately great. Of the hundreds of thousands of people who have tried, and who still occasionally try, the rollers, but few have attempted more than straightforward skating, with perhaps a feeble attempt at outside edge; and, inasmuch as skating round and round an inclosed rink (when the novelty of this kind of self-propulsion has worn off) must necessarily become monotonous, roller-skating is voted slow, and not to be compared with ice-skating.

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[1] The following chapter appeared in the *Field* newspaper in the shape of weekly notes, and the proprietors have kindly given Mr. Witham permission to reproduce them in the third edition of *Figure-Skating*.

The pleasure of roller-skating only begins where these critics leave off. Why is it that figure-skaters on ice do not attempt their ice movements on rollers? First, they are disgusted that they are unable at once to do on the rollers what they have been accustomed to accomplish on ice, because they attempt figures and turns in identically the same way, forgetting that with the ice-blade they have a universal pivot on which they can turn, while the pivot of the roller-skate is confined to one of two fixed points, the toe and the heel. Secondly, finding a greater difficulty than they expected, they will not take the trouble of puzzling out for themselves the difference between the two instruments.

But this is not all. If figures skated in combination on ice were, for the sake of argument, forbidden, we believe the Skating Club rink would be deserted by the members at the end of a fortnight's frost! The climax of pleasure derived from figure-skating is reached when figures are skated in combination with others, and hitherto this, the great pleasure in ice-skating, has been entirely overlooked when using the rollers. With well-fitted skates and a good floor, all the club figures can be done as well as on ice. The pleasure derived from skating on rollers should be, and is to the proficient, identical with ice, the motion is the same, and the pace nearly equal, and the exercise, as an exercise, especially for ladies, is unrivalled. It is graceful, health-giving, and inexpensive; but hitherto there has been no standard of excellence. Combined figures have hardly ever been tried; consequently there has been none of that assiduous practice one sees on the ice at the Skating Club, leading up to such excellence as will enable the skater to take his or her part in a combined figure. Dancing has in a modified degree the same qualities as skating; but how long would the love of dancing exist, and how would people be induced to endure the heat of a ball-room, if dancing were without any system—if every one were to waltz by himself or herself, or were to go through the steps which go to make up the evolutions of quadrilles and lancers, each on his own account, without combination with others? Without a system and without combination, dancing would cease to exist, and yet it seems to be expected that roller-skating, as a permanent institution, should continue to be popular, although we eliminate from it the very elements that are the life and soul of its twin sister, dancing. Stripped of all surroundings, the fascination of gliding on skates is fifty times greater than the fascination of dancing, and hence of itself it has existed for some years; but if we add to it that which is the life and soul of dancing, it ought to be, and we believe would be, fifty times more fascinating.

We quite admit that there are social and physical difficulties to overcome before combined skating on rollers becomes popular; and to take the social difficulty, as being the greater, first: When roller-skating was first introduced, the mania was so great that everything had to give way to the craving to indulge in the new pastime. By many, skating was indulged in three times a day every day in the week! The usual barriers that divide people of different social position meeting together in the same place of public resort were thrown to the winds. Ladies who under ordinary circumstances would have resented the proffered assistance of a stranger as an impertinence, in their desire to attain the movement which is described in "Pickwick" as "swan-like," accepted it with gratitude; and hence undesirable acquaintances were formed, and papa and mamma took fright, and very properly tabooed the rink. If inquiry were made of those thousands who used to skate whether they ceased to skate because skating no longer afforded them pleasure, eighty out of a hundred would declare that they enjoy skating as much as ever, but that there is a sort of undefined feeling that skating in a public rink is not the "correct thing." Now, this undefined feeling has arisen almost entirely from the fact that it is popularly supposed that acquaintances may be formed at a rink by a stranger who skates well, proffering his assistance to a lady who can't skate at all, and that the same strict notions of etiquette as to introductions which are observed at a public ball are not observed at rinks. At a public ball people make up their own party, and confine themselves to dancing exclusively with the members of such party, and before going to a public ball every one learns in private how to dance. But with skating it has been customary for two or three ladies to go to a rink; they are at first perfectly incapable of making a single step alone; and the desire to skate as well as others they see skating is so great, and the assistance which a good skater can give so material, that they accept the assistance of any stranger who may tender it.

Now, if instead of this state of things ladies were to have certain mornings set apart for private practice, and if they were never to skate in a public rink until they were past inviting assistance by their obvious helplessness, and if parties were to be arranged as at public balls, we feel sure that roller skating, as a means of exercise superior to every other description of exercise available for ladies (except perhaps horse exercise), would become appreciated, and that rink parties would become more popular, because more health-giving, than balls. With regard to the physical difficulties attending roller-skating, it has occurred to us that a book treating of skating would be incomplete without some directions as to attaining skill on rollers, and that in giving any hints which will assist in the acquisition of movements which at first appear difficult, we shall be providing a fund of amusement for the thousands of skaters who have tried the rollers, but who have given them up in disgust because they failed to realise their early expectations.

The selection of skates is naturally the first thing to attend to. The Plimpton patent has expired, so that skaters can buy any of the numerous imitations of his patent, but we doubt if any are so good as the original Plimpton skate, and certainly none are to be compared to the new Plimpton self-lubricating skate. Skates should be chosen of a length rather shorter than the foot, as the approximation of the heel and toe wheels, by bringing the available pivots nearer together, enables turns to be made with greater facility. The wheels should run freely and true on the axles, and should be carefully fitted to the hangers, so that little or no lateral play exists. Referring to the original Plimpton skate, a thin iron washer, inserted between the inner hub of the wheel and the side of the hanger, if the latter be too broad, prevents lateral play, and tends to hold the oil, and so keeps the skate properly lubricated for a long period. For advanced skaters, raising the inner ends of the plates by inserting under them pieces of leather the one-sixteenth of an inch or more thick is of advantage, as, by giving the axis a greater inclination, it causes a greater convergence of the axles of the wheels when lateral pressure is applied to the foot stock, and consequently smaller circles can be skated; but with skates so "set up," the balance is more delicate. The hangers should not be screwed too tight to the plates; if they are sufficiently tight to ensure the rubber washer bringing the wheels back to parallelism when lateral pressure is removed, it is all that is necessary. The difference between skating with a pair of skates having true wheels, no lateral play, and "set up" as above described, and skating on a pair with badly adjusted and untrue running wheels, is similar to the difference which exists between skating on pure virgin ice and the roughest and most cut-up snow-ice. Many skaters have doubtless made their three or four attempts at roller-skating on bad and worn-out skates, and cannot realise the close resemblance of the two motions of skating with a good pair of roller skates on a good floor, and skating on ice with ice-skates. It is quite true that with roller-skates the charm of skating *rapidly* executed movements, consisting of turns, cannot be compared favourably with the same movements on ice, because the balance has to be shifted, not an inch or two as on the ice-blade, but to one or other of the two fixed pivots at the extremity of the skate; but in all ordinary movements, where the charm does not consist in extreme rapidity, skating affords the same pleasure, whether on ice or rollers.

The difference of friction of roller-skates on a good floor and ice-skates on ice is hardly perceptible, so long as curves, without the intervention of turns, are made with the roller skate. When turns are imported, as they have to be done on a single set of rollers, great weight is placed on the axle of the wheels, and considerable friction set up. The ease and speed with which some skaters perform curves arises from the proper adjustment of the balance, so as to cause the weight of the body to be equally divided behind the front and hind wheels. The subject of friction naturally leads us to the consideration of floors.

Asphalte is probably the most universal skating medium in English rinks, and skaters frequenting an asphalte rink get accustomed to it, and prefer it to other floors; but it is not in reality a good skating medium. It is never absolutely level. There are always hills and holes, not perhaps perceptible when dry, but easily seen when wet; and these inequalities, though so slight, are all against the skater. Then, again, it is liable to be affected by changes of atmosphere. In warm weather it becomes soft, and in a damp atmosphere, particularly after a frost, it throws up wet and becomes so greasy that skating is impossible; but it has one advantage over the cement, which was first tried at Prince's Club, Brighton, and other places—it does not wear the wheels to any appreciable extent.

Skate-wheels are made of box-wood, and one side of the wheel will frequently be of softer wood (from being near the bark) than the other. Half-an-hour's skating on cement would wear away this soft portion, throw the wheels out of truth, and cause the skater to feel as though he were skating on a most uneven surface — an unsatisfactory result, necessitating new wheels; but this, although a temporary, is not an effectual remedy, as new wheels do not give good results until they become well saturated with oil. Luckily, there are but few cement rinks nowadays. Slabs of marble have been tried at Prince's Club and at the Marble Rink, Clapham, and the result is most satisfactory. The surface is quite level, and the "bite" of the skate-wheels leaves nothing to be desired. It is fairly fast, and when one gets over the feeling that the joints of the slabs *must* be uneven, it is a very charming floor.

The remaining medium to be mentioned is wood—hard American pine, cut into strips of from 1in. to 1⅝in. wide, and so arranged that no strip has the grain of the wood flat or parallel to the surface; these strips are nailed or screwed at the back to battens placed diagonally across them, and so made into sections which will open and shut after the manner of a parallel ruler, and which interlock one with another. The floor thus made is perfectly level, fairly fast, and gives a good holding surface; can be easily repaired if injured; and can be taken up and readily removed elsewhere without injury or expense other than the cost of cartage. For private rinks in country houses this is the best floor, as on occasions the rink may serve as a ball-room. The wooden floor at the Hove Rink, Brighton, is a good example of a pitch-pine floor, and most skaters who have tried it will agree with us in thinking that nothing could be better. But in skating-floors, as in other things, "use is second nature," and a man accustomed to asphalte would at first probably prefer it either to marble or wood, although in reality these are undoubtedly superior to it.

We will assume that our readers have conquered the difficulty of straightforward skating, and that they have been sufficiently observant to notice that the smallest inclination of the foot-stock to the right or left causes the axles of the wheels to converge, so as to run the skate in a curve to the right or left.

A slight inclination to the right when poised on the right foot, or to the left when poised on the left foot (and this inclination can be obtained by bringing forward the left shoulder when on the right foot, and *vice versâ*), and the skater is at once placed on what corresponds to the outside edge in ice-skating. This is, therefore, much easier to attain on roller than on ice-skates, as, instead of having, as on ice, to lean over to "catch" the edge, the skater, who is in fact balanced on a greased wire, can by the slightest inclination to the right or left produce the portion of a large circle, and by a greater inclination the portion of a smaller circle, either to the right or left.

One cannot go into a rink without seeing the veriest tyro making curves that should be the outside edge, graceful and "swan-like," but which resolve themselves into awkward plunges on either foot to the right or left.

To attain the "swan-like" motion, it is necessary that the curve should be a true curve from start to finish—the true segment of a circle, whether large or small; and this can only be attained by placing the foot, which is about to describe a curve, parallel with the foot that has just finished a curve: for instance, the left foot at the end of a curve made by the right must be placed *parallel* to it, and *vice versâ*, and so allowing the body gradually to take the inclination, and the skate the consequent curve, in the opposite direction.

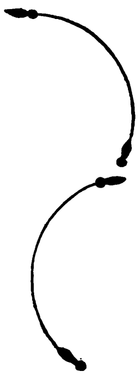

FIG. 14.

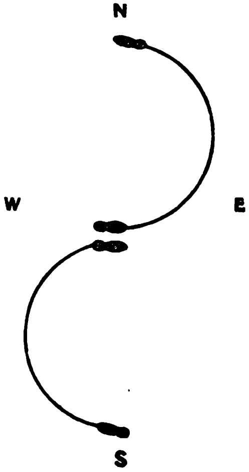

FIG. 15.

Ninety-nine skaters out of a hundred, after making a curve to the right with the right foot, throw the balance abruptly on to the left, which is usually placed at right angles to the right, and this has the effect of entirely destroying the grace and swing which should be the characteristic of the outside edge. The diagrams (figs. 14 and 15) will illustrate our meaning.

Ladies especially, unless properly taught, almost invariably adopt the wrong method, as illustrated by Fig. 14, and when once acquired, it is most difficult to eradicate. Perhaps the best way to correct the fault is to take the pupil's hands, sideways, and start as in Fig. 15, going from south towards the north, on a curve with the right foot; at the end of a curve consisting of a half circle the skater's foot will be pointing in a north-easterly direction; now let the toe of the left foot be turned *in* sufficiently to enable it to be placed parallel to the right, and the new curve on the left continued in a north-easterly direction, gradually coming round to north, and finishing the half circle with the toe pointing north-west, and so on.

Two circles complete except where they near each other, as Fig. 16, should now be marked on the floor, and the pupil set to follow the curves, when it will be evident that, to make the circles opposite each other, it will be necessary to place the feet parallel when striking from one foot to the other; and this eight (for circles so made form what is known in skating as the figure 8) is most excellent practice, but it cannot be easily sustained on the rollers, unless the body is so poised as to distribute its weight equally on both the toe and the heel set of wheels. When the outside edge is properly skated with true half circles, the knee braced up, and the body erect, it is as fascinating on a well-fitted pair of roller-skates as it is with ice-skates on ice; and so far as gracefulness is concerned, we have rarely seen a lady skate an outside edge on ice with anything like the grace we have seen imparted to the same movement on rollers.

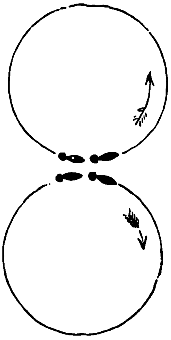

FIG. 16.

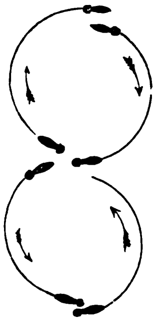

FIG. 17.

The above remarks as to the parallelism of the feet when taking the stroke apply equally to the outside edge backwards, the tendency to go off at right angles with the succeeding stroke being even greater backwards than forwards. When four persons can with certainty skate eights by making a whole circle on either foot, it is competent for them to skate a combined figure—an elementary one it is true, but still a combination that requires, to make it successful, attention to time and truth of curves.

The four take up their position at the corners of an imaginary square, and at a given signal advance to the centre and join right hands across, and each skater performs a whole circle with the right foot, when hands are loosed, and each skates from the centre with a half circle on the left, then a whole circle on the right, and again a half circle on the left. This brings them again to the centre, when hands are again joined, and this time, instead of a whole, a half circle is skated and hands loosed, and a half circle as before skated outwards, and so on —the effect of skating the *half* circle with joined hands in the centre being to shift the position of the skaters every time they go from the centre. This and other elementary combined movements are described and illustrated with diagrams in "the ladies' chapter." As curves only without turns are skated in these figures, they are eminently adapted to roller-skates. The cross roll, instead of the outside edge proper, is generally made use of in skating the above combination. This is easily acquired by crossing the feet in front, and walking with the toes turned *in*, then gradually allowing the feet to slide a few inches at a time until confidence is attained. The necessity of turning in the toes in order to skate the cross roll *at all* is another illustration of the necessity of parallelism of the feet at the moment of changing from the outside edge of one foot to the outside edge of the other. Attention to the parallelism of the feet will also be of the greatest assistance in the inside edges, both backwards and forwards. The interposition of a stroke of inside edge between two curves of outside, called the "promenade step," if well done, is very graceful, and has the effect of increasing the speed of the skater to an extraordinary degree. An outside edge is skated, say, on the right foot for some yards, when the left, with the toe turned in, is put down behind and outside the right, which is taken up, and the curve continued in the same direction on the inside of left for a short distance, when the right is again put down, and the interrupted curve of outside edge is continued. The left is then put down, and the same movement, with the curves to the left, repeated. This can, of course, be reversed by starting on an outside curve backwards. A very pretty change from an outside edge forward on one foot to an outside edge backwards on the other can be skated by "spread-eagling" the feet, and this forms a very effective eight (Fig. 17) as follows:

A half circle is, say, skated on the right foot, and at the moment of the desired change the left shoulder is thrown back and the left foot suddenly turned out, so that the toes of either foot are pointing in opposite directions, placed in rear of and parallel to the right, and the other half of the circle on the outside back of left completed. The right is now put down, as in the "back entire," by crossing the feet behind, and a half circle skated, when the feet are again "spread-eagled," and the left put down in front of and parallel to the right, and the half circle on the left outside forward continued to the centre. On ice this is an extremely difficult movement to most men, as so few are able to turn out their feet "spread-eagle fashion" so as to describe a curve, the centre of which is at the back of the skater, as this must be done without any assistance from the hold of the skate on the ice; but with the rollers a skater has only to place the skate in the desired position and lean backwards, when the wheels will, so long as the inclination is sustained, hold his feet as it were, and compel them to describe the curve.

This change—which, by the by, was last year introduced into the Club figures on ice, and christened by the name of "Mohawk"—can, of course, be utilised with advantage in many movements other than in the eight.

We have dwelt at some length on the subject of the outside edge; for learning to skate it with ease and grace smooths away many subsequent difficulties, as it is constantly cropping up and being utilised in figure-skating.

Having mastered the difficulty of the four edges, it now becomes necessary to acquire the turns, which will enable the skater to blend the different edges together.

In making turns it is absolutely necessary *that the body should turn the feet*, that is to say, the body must be swung round in the desired direction before an attempt is made to alter the direction of the foot. The fault of every beginner, both on ice and on rollers, is that in attempting a turn his whole attention is directed, not to the change of balance that will ensue on the turn being made, but to the foot that is to make the turn; and even if by means of a violent wrench its direction be changed, yet the subsequent curve cannot be sustained, for the balance remains as before the attempted turn.

In all turns the inclination of the body is in the same direction after as before the turn, but as a turn alters the direction of going, so the edges (except in the rocking turn) are always altered from in to out or from out to inside, and this necessitates an alteration of the balance, so that unless the body be so turned at the moment of change as to enable it to accommodate itself to the new balance, the movement ends with the turn, as the position of the body requisite for the resulting curve taking place is such as renders the curve impossible.

As we have before remarked, the turn on the roller-skates is much more difficult than on the ice-skates, because the turning must be done on one of two fixed pivots, the toe or the heel; but this is not the only difficulty, as the forward portion of the ice-blade is also used for making forward turns and the heel portion back turns; but on the ice the cutting edge of the skate prevents a slip backwards or forwards; with the rollers, unless the body be, at the moment of change, correctly poised over the pivot, a slip may take place either forwards or backwards. Another difficulty to beginners is that, during the moment of the turn taking place, they (if a forward turn is to be made) so lean forward as to throw the weight of the body almost entirely on the front wheels, and this causes such friction on the axles that no impetus is left to continue the resulting curve.

Taking the common 3 (from the outside forward to the inside back) as an example; the skater should start, say, on the right foot on a curve of outside edge, taking care to have the weight of the body equally distributed on both front and hind wheels, and at the moment preceding the change, the body, from the hips upwards, should be turned as much to the right as will put it in a proper position, without further change, for taking the inside edge backwards after the turn has been effected.

In making the turn the skater raises the heel by poising on the toe. This poising on the toe is instantaneous, and if the body be properly turned before raising the heel the foot follows the rotation without any effort. As soon as the turn is effected the unemployed foot, which up to this time should have been kept behind the other, is brought up, and the toe turned slightly out, and the skater's face turned in the direction of the left shoulder, both of which actions tend to keep back the left shoulder, and so enable the curve to be made large. The common 3 above described should be practised until the skater is equally expert on either foot; and he ought not to consider himself proficient until he can skate 3's to a centre in the form of an eight, making the curves of the same length, and the turns in the middle of the curves. In consequence of the rotation given to the body by the turn most skaters find a great difficulty in striking direct from the tail of a three on one foot to the commencing curve of outside edge on the other, but the keeping back the shoulder corresponding to the unemployed foot is the means of conquering this difficulty. The turns from a forward to a backward direction are done on the front pair of wheels, and from a back to a forward direction on the hind pair of wheels—at least this is the easy and natural way of doing them; but with a great deal of practice the turn from a back to a forward edge can also be skated on the toe, and when this is accomplished the delightful feeling experienced in doing the double 3's and back Q's on ice is equalled on rollers.

To acquire the power of doing the second turn of the forward double three, which is, in fact, also the difficult turn from inside back to outside forwards in the back Q, on the toe, the unemployed leg must be swung out and gathered in again exactly as is done in the same movement on ice; and *until the* knack of swinging the unemployed leg is acquired, urn on the toe cannot be made; not that the swinging of unemployed leg is the actual cause of success, but because leg cannot be so swung forward unless the body be in the per position for accomplishing the turn.

Threes are divided into single, half-double, and double ees. As the skater, in making what is known as a turn, verses the body half a circle, an even number of turns will store him to the same edge he started with, while of course odd number of turns will place him on a different edge.

1. The single 3 is formed by commencing with a curve n one edge, making the turn, and finishing on another dge, viz.:

From inside forward turn to outside back.
From inside backward turn to outside forward.
From outside forward turn to inside backward.
From outside backwards turn to inside forwards.

2. The half-double is formed by two turns, interposed between two curves; and as the two turns cause the skater to make a whole revolution, the half-double finishes on the same edge as that on which it was begun. The half-double, as well as the single and double, threes can be begun from any of the four edges. One example will suffice, viz.:

From inside forward turn to outside backwards, and again turn to inside forwards.

3. The double 3 is formed by three turns, interposed between three curves. One example will suffice, viz.:

From inside forwards turn to outside backwards, and again turn to inside forwards, and again to outside backwards.

There are innumerable combinations of threes, the proper execution of which will afford weeks of hard practice. We give a few examples:

1. From inside forward on right turn to outside back, when the left is crossed as in the "back entire," and a curve of outside back, and a turn to inside forward, skated. If we may say so, the three is skated with one foot and "unskated" with the other.

2. From outside forward turn to inside back, and, the three completed, the left foot is put down on the inside back, and a turn made to outside forward. See Fig. 18.) The feet may

now be crossed as in the forward cross roll, and the movement repeated.

3. From outside forward on right turn to inside back, when the left is put down on a curve of outside back and a turn to inside forward made, and a change of edge to outside forward affected, and when this last curve has been continued some distance, the right is put down spread-eagle fashion, and the left shoulder, being kept well back, the circle is completed, when the same movement, beginning with the left foot, may be repeated. This can also be varied by skating double instead of single turns.

4. Half-doubles may be skated in the form of an eight, either backwards or forwards, by joining them by means of the cross roll.

5. A forward half-double on the right may be joined to a back half-double on the left by passing the left in rear of the right, spread-eagle fashion, at the end of the forward half-double, and taking up the curve in the same direction with the outside of left.

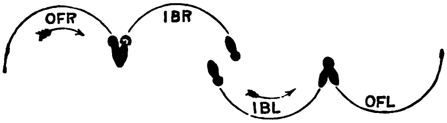

FIG. 18.

As the slightest inclination of the foot-stock, either to the right or left, sets the wheels so as to run the skate in a curve to the right or left, changes of edge are much easier on roller than on ice-skates, and all the Q figures as skated on ice can be skated on rollers, and, so far as the changes of edge are concerned, are easier than on ice.

The Q figures are capital practice, embracing as they do a change of edge and a turn, and they can be made continuous by means of the cross roll. One example will suffice. Start on a curve of outside forward, change to inside forward, and turn to outside back. Then cross the other foot as in the back entire, continue the half circle, change to inside back, and then turn to outside forwards, when the feet can be crossed as in the forward cross roll, and the movement repeated; if the turn from inside back to outside forwards be done on the toe wheels, the effect is similar to the same movement on ice.

One-foot eighths, *i.e.* eights composed of a circle of outside and a circle of inside on the same foot, joined by a change of edge, are difficult on rollers until the balance of the skater is so perfect that the swaying of the body in making the curves and changes of edge does not place the weight of the body more on one set of wheels than the other. The unemployed foot must, as in doing the same movement on ice, be brought slightly to the front at the moment of change from one edge to the other; but this unsightly movement is not nearly so marked in one-foot eights on rollers as on ice-skates, because on the latter the effort to effect the change of edge must necessarily be much more violent. Indeed, if the roller-skates and floor are in perfect order, the movement can be done without any bringing forward of the unemployed foot; but then great attention must be paid to the proper position of the skater's shoulders. For instance, if on the right foot while on the outside forward, the left shoulder must be, as it were, in advance of the foot; and after the change to inside forward, the right shoulder must be brought forward in the same way. In one-footed eights backwards the converse is the case. When one-footed eights can be skated with such certainty that the skater goes over the same track each time, they may be varied in many ways, as by turning from outside forward to inside back, or from inside forward to outside back, or from inside back to outside forward. They can also be varied by using the rocking turn from all edges; for instance, when approaching the centre on the outside forward, by suddenly throwing the left shoulder back and twisting a half revolution on the toe, the skater is placed on the outside back, when a change to inside back and a turn to outside forward will enable him to repeat the movement. In all these variations of one-footed eights the changes of edge are made at the point where the two circles are joined, and the turns in the middle of each circle. It will be perceived that the changes that can be applied to one-foot eights are endless, and to a person who sees a one-foot eight for the first time, particularly if it be skated with the above variations and continued for five minutes or so, the whole thing appears to be, and is in fact, a very marvellous feat.

In commencing the practice of one-foot eights, the skater should not attempt to make whole circles, but should begin with a change of edge in a serpentine line, gradually approximating the curves to whole circles of outside and inside edge. As a stepping-stone to a perfect one-foot eight, a complete circle may be skated on the outside edge, the change effected, and a half circle of inside, and then, by changing the edge again, a whole circle of outside and so on skated; and again this may with advantage be varied by making the whole circles of inside, and the half circle of outside edge. The first of these forms of the serpentine lines can be skated on one foot, and continued on the other by joining the two by means of the forward or back cross roll.

When a serpentine composed of curves of half circles can be sustained indefinitely on either foot, a curious movement, known in America as "the reverse on to Richmond," can be skated in a straight line, and subsequently in the form of an eight. The movement appears curious from the skater's feet being placed one behind the other, as though he would go backwards, instead of which he advances in a forward direction. In fact, it is in some respects the reverse of what is known in England as the "back scratch," which is performed by the skater crossing his feet alternately *in front* and going *backwards* on alternate curves of outside edge. In "the reverse on to Richmond" the converse of the above is skated to this extent, that the skater crosses his feet one *behind* the other, and yet *advances;* but there the similarity ends, as in the ordinary back scratch simple curves of outside backwards suffice, but in the "reverse on to Richmond" a change of edge on either foot is necessary to enable the skater to continue the movement, either in a line or in the form of an eight. Again, as the impetus derived from a change of edge is greater in changing from an in to an out than from an out to an inside edge, the foot that takes up the movement is placed behind the other on the *inside* edge. For instance, start on a curve of inside edge, say on the right, and, when half a circle is completed, change the edge and skate a half circle of outside;

then place the left foot behind and outside of the right (which is taken up) on a curve of inside edge corresponding in direction with the curve just finished by the right, and, when half a circle or less has been completed, change to outside, and so on. It is not an easy movement to accomplish, even its simplest form of serpentine lines, but becomes really difficult when skated in the form of an eight, as shown in Fig. 19; the eight is in fact a one-footed 8 cut in two, half being done with the right and half with the left foot.

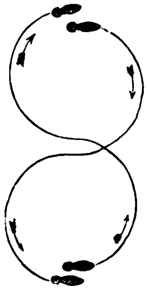

FIG. 19.

The double-footed eight, which is similar in character to the one-footed eight, viz., two whole circles joined by a change of edge, is a very pretty figure on roller skates. The feet are placed in line, the toe of one foot almost touching the heel of the other, and to be effective the feet must "track;" and herein lies one of the difficulties. It is easy enough to cause the feet to "track" while making the circles, but at the change of edge the feet are apt to get out of line, as, both feet being employed, the change of edge becomes more difficult, and can only be obtained by swaying the body from the hips upwards in the direction of the desired curve. In one-foot eights the swinging backwards and forwards of the unemployed leg at the moment of change assists the skater materially, but with the double-footed eights the balance is shifted entirely by the body. To learn the movement, a serpentine line should be tried, gradually getting the curves more into the shape of circles. When the skater is perfect in double-footed eights, both forward and backward, they can be joined in the following manner:—Supposing the right foot to lead, and a circle, with the right foot on the outside and the left foot on the inside, to be made, the skater, keeping the feet in the same position, throws back his left shoulder, and, by a "rocking" turn on either foot, turns backwards; the left foot will now be leading on the inside, and the right following on the outside backwards. The whole circle having been completed, the right foot is brought up parallel to and outside the left, and flipped back with the half turn of the Philadelphia twist; and as this brings the feet into the position at starting, viz., the right foot leading and the left following, the eight can be repeated. Another but more difficult method of change is to start as before, and, arrived at the centre, the skater throws back his *right* shoulder, and turns backward, with the common three on the right and the reverse three on the left; but the feet being in line, the turn is very difficult. The left foot will now be leading on the outside, and the right following on the inside edge. The whole circle completed, the edge should be changed and the eight completed, when the skater can again turn forward with the half turn of the Philadelphia twist. If two or three complete eights are skated in a forward direction, then a turn effected, and two or three skated backwards, the effect is very pretty, and very puzzling to the onlooker, as, if the body be properly swayed from the hips, the whole is done without apparently the slightest effort, and, no stroke being made, the puzzle is where the motive power comes from. A spin (to be hereafter described) of three or four revolutions inserted between the circles at the change of edge is also very effective.

If our readers have succeeded in accomplishing the various movements above described, there is no reason why combined skating should not be proceeded with. Given good skates, a good floor, and sufficient space, and all the Club figures can be skated on rollers as well as on ice. It is unnecessary to add a word to the directions given in the subsequent chapter on "Club Figures" as to how these figures should be skated; everything there stated as applicable to the skating of Club figures on ice applies to the same movements on rollers. It may be well, however, to remember, seeing that the *turns* cause the skating on rollers to be rather slower than on ice, not to attempt the Club figures with more than four skaters. The same difficulties that occur on ice will be encountered on rollers, and it will be found that before the figures "go," no matter how great the individual skill of the respective skaters, great practice together is necessary, and this necessity of combined practice is a source of endless amusement.

The skating of loops on rollers, as on ice, seems to fascinate the novice in figure-skating. One frequently sees a youngster putting himself into the most frightful contortions in the vain attempt to accomplish a loop, and this mania usually seizes on him long before he has the faintest idea of how to skate the ordinary rudimentary figures.

It cannot be the difficulty alone which causes loops to receive so much attention, as other movements are equally difficult; and it certainly is not the grace displayed, as it is almost impossible to skate loops without great contortion of the body. They are skated on one set of rollers, and theoretically can be done from all edges; but we have never seen but one man (Goodrich, the American skater) who could skate them from an outside edge forwards. From the outside edge backwards, they seem to come somewhat easier, as we have seen them skated by two gentlemen at the Marble Rink.

The loops which are skated most easily on rollers are those from the inside back and the inside forward.

The inside back loop is usually skated at the end of a three, and it comes easier then, inasmuch as the body has received a certain rotation from the turn in the three itself; it is done on the toe, and at the moment of doing it the unemployed leg is swung in the direction and in advance of the rotation of the body. The skater must, in fact, execute a movement similar to the movement of an expiring spinning-top. Keeping the body very erect, swinging the unemployed leg well to the front, and last, but not least, *constant practice*, are the means by which loops may be gradually acquired. One of the difficulties to overcome is the ability of continuing the curve after the loop has been made, and this arises from the ankle frequently being bent in one direction, and so setting the wheels as to cause the skate to strike a curve in that direction, while the true balance of the body is in the opposite direction. The three-and-loop, skated on either foot alternately and in a line, is an effective figure and very difficult, as the loops have to be so accurately done to insure the direction being continued. The inside loop backwards is also effective when done at the end of a series of interlaced forward and backward Q's.

To skate the loop from the inside edge forward, describe a short curve of outside edge forward, and change the edge at the same time, bringing the unemployed leg in front of and well across the other. The unemployed leg is then swung round behind the other, the toe of which is raised, and the loop skated on the heel, although some skaters prefer to skate this loop on the toe, when of course the heel is raised. If the rotation of the body be continued and the balance be true, a pirouette, consisting of one or more revolutions, can be effected, but then the movement loses the character of the loop, and becomes a one-foot pirouette or spin.

The rotation is imparted by the swing of the unemployed foot, which is swung out and carried behind the other; and the body, from the hips upwards, is turned in the direction of the proposed rotation before the foot is allowed to move; the toe is then lifted, and the pirouette on the heel or the toe is the result.

The only way we have seen a loop from the outside forward skated has been by skating a three, say, on the right, and getting the *right* shoulder well *back* at the end of the three, and then, placing down the left on the outside forwards, suddenly bringing forward the right shoulder and swinging forward the right foot, and rising on the toe of the left. The rotation imparted by these tactics is so great that the body *must* turn, but, to the intense disgust of most skaters, it will be found that, instead of making a forward loop on the outside edge, a cusp and a back loop on the inside edge has been formed. (See Fig. 20.) The rotation must be obtained by this bringing forward of the right shoulder, but the unemployed leg must be swung in advance, and must continue in advance, of the rotation, or the body relieves itself from the strain by turning to the inside back.

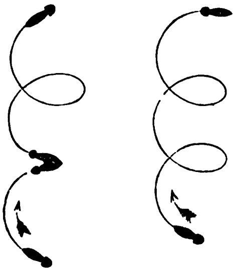
FIG. 20.

The manner of skating an outside loop reminds us of a story we once heard of how a square of infantry was broken by cavalry in line. The cavalry regiment was wheeling, and the outer flank, swinging round with great velocity, came suddenly and unexpectedly on a square of infantry; but, so great was the impetus, and so sudden was the whole thing, that in an *instant* the men on the outer flank had ridden right into the square and broken it. In skating an outside loop on the left foot the right shoulder corresponds to the outer flank of the cavalry line, and brings the body round with tremendous velocity, and, if everything be right with the pivot, all will go well; but, if the body is not correctly poised, a tremendous cropper ensues, as there is no chance of saving oneself. But the very danger that accompanies it makes the outside loop fascinating.

Without forming loops, if the same tactics as above be pursued, and (after the first swinging forward of the shoulder and the unemployed leg, for the purpose of obtaining rotation) the body be kept erect, a pirouette of several revolutions may be effected.

In the same way a whole revolution can be made on the toe in the middle of each circle of the cross roll eight. The difficulty here is to check the rotation when a whole revolution has been made. Unless the body be very correctly poised at the moment of swinging round, the foot will describe a cusp and a loop, and the skater will then be placed on the inside edge backwards, which renders the forward cross roll impossible. If, therefore, the skater cannot manage the forward loop, he must so arrange his balance as to insure a pirouette (*i.e.* one whole revolution in the same place), so that after the revolution the interrupted curve of outside edge may be continued.

The difference between a loop and a one-foot spin is exactly exemplified by the motion of an expiring spinning-top and a top spinning at full speed. In pirouetting or spinning, therefore, the body of the skater must be as upright as possible, and correctly poised over the centre of gravity, and the leg which was swung out to impart rotation must be brought alongside of the other. The easiest way to learn a one-foot spin on the toe—say on the left foot—is by commencing with a curve of outside with the right and changing to inside edge, at the same time putting down the left toe in the centre of the circle being described by the right. When the skater feels himself balanced on the toe, he should rise on it, and take up the right. The arms should be thrown out at right angles to the body at the moment when the right foot is circling round the left; but they should be brought to the side as soon as the skater is balanced on the toe. The toe pirouette is a capital introduction to the pirouette using both feet, as it begins in the same way, only, instead of taking up the right foot, the toe only is raised, and the skater revolves on the toe of the left and the heel of the right foot.

The rotation is given by the right foot circling round the left and the swing of the arms (which should at the start be at right angles to the body) in the direction of the desired rotation. The arms should be kept very stiff and rigid, and gradually pressed close to the body. The movement is one of extreme difficulty, as the base is always shifting, and it requires an immense amount of practice before it can be skated with anything like certainty. Fifteen revolutions is considered a moderately good spin, but some men manage as many as thirty revolutions. To look well, the movement should be done with the feet rather close together, and the skater should remain on the same spot.

Even to those skaters who are able to execute grape-vines on ice, the same movements on rollers present many difficulties, though it will be satisfactory to those who cannot skate grape-vines on ice to learn that the power of skating them on rollers renders their acquisition on ice very easy.

The constant shifting of the balance from toe to heel which is necessary in the rapid changes is very puzzling, and the best help we can give to learners, in addition to the diagrams, will be to specify which sets of wheels, whether toe or heel, are to be used in the various changes.

We believe the following grape-vines are the only ones at present known in England.

1. The single grape-vine, starting with the right foot in front.
2. Ditto, starting with the left foot in front.
3. The double grape-vine, starting backwards.
4. Ditto, forwards.
5. The Philadelphia grape-vine, starting backwards.
6. Ditto, forwards.
7. The Philadelphia spread-eagle grape-vine.
8. The Pennsylvania grape-vine, starting forwards.
9. Ditto, backwards.

Before attempting the grape-vine, the learner should make himself master of the various movements that are used in skating this complicated figure. These are the chain step forwards and backwards, the serpentine line on both feet forwards and backwards *with the feet tracking*, and single turns on either foot.

When the skater is *au fait* at these movements, he should begin the single grape-vine by allowing the right foot to pass in front of the left with the movement of the chain step, when the right shoulder should be thrown back, and a turn to the right made by means of the common 3 on the right and the reverse 3 on the left foot, the turn on the right foot being half a second in advance of the left. Up to this point the movement is perfectly simple; the turn on either foot has brought the skater's body round half a circle, and he is going backwards on a curve to the left with the right foot leading. When this curve has been sustained a short distance, the balance of the body has to be shifted, and the feet being retained in the same position (that is, with the right leading), a curve has to be made to the right, and the left foot allowed to take precedence of the right by *gradually* circling round it. The right shoulder has now to be brought forward, and the right foot turned inwards on a curve of inside forwards. At this moment the feet are at right angles to each other, with the toes pointing inwards; but this awkward position is soon relieved by the left following the right on a curve of outside forwards, and this turning from forwards to backwards by half revolutions with the intermediate curves, is what constitutes the grape-vine. As some people have a difficulty in turning the toes in so that the feet are at right angles to each other, it is well to begin practising the grape-vine by walking with the feet in the position shown in Fig. 21, as when skating the grape-vine the feet take exactly these positions: see B and C of Fig. 22. But the great secret is to make a distinct change of edge as shown at A in Fig. 22, without altering the position of the feet, and then gradually to let the left circle round the right, as at D, so far as will allow the right when turned to the left to be at right angles to it. When, therefore, the right has arrived at E, it should remain stationary

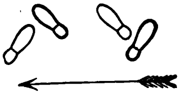
FIG. 21.

until the left has reached D. The power of continuing the movement is obtained principally by bearing on the skate, and forcing the leg in the required direction at the two points in Fig. 22—marked *d* and *e;* at *d* with the left foot when progressing backwards on a curve of outside, and at *e* with the right when progressing forwards on a curve of inside; but swinging the shoulders in the desired direction is essential before the grape-vine can be skated without any apparent

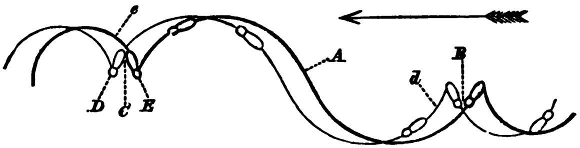

FIG. 22.

effort. The thick line of Fig. 22 represents the right foot, the thin line the left foot. The turns from a forwards to a backwards direction are made on the toes, and from a backwards to a forwards direction on the heels, and at each turn the body is moved round exactly half a circle. In turning from backwards to forwards the right shoulder *must* be brought forward, and the skater will find that the looking round to his left, so as to be in a position to see his own heels, is a great assistance in helping him to attain the right position. The feet in all grape-vines should be kept as near together as possible.

When the grape-vine has been acquired, starting with the right foot in front, it should be learned starting with the left foot in front, and of course making the first turn to the left; and when this is accomplished the double grape-vine can be tried. This is fully described in Chapter XIII.; but on rollers, as indeed generally on ice, the marks made by the skater, as shown in Fig. 25, viz., with a cusp, a *loop*, and a cusp, are more correct than in the diagram in Chapter XIII., where three cusps are shown. Curiously enough, the figure made on the ice or floor when doing the double grape-vine is similar to the figure made in skating the Pennsylvanian grape-vine, although the position of the feet while executing the two movements is quite dissimilar. The only difference between the diagram made in skating the double and the Pennsylvanian grape-vines is, that in the double the cusps and loop are further apart than in the Pennsylvanian, while the intervening curves are shorter. In the forward double grape-vine the cusps are made with the toe-wheels, and the loop which is between the cusps with the heel. In the backwards double grape-vine the converse is the case. If the floor be powdered with a little chalk or whitening, the marks made by the skate can be distinctly seen.

The thick arrow indicates the forward direction of the figures shown in both the Figs. 23 and 25; the thin arrow, the backward direction of the same figures.

We now come to a grape-vine which was learned by many skaters last year on the ice, but which has not hitherto been described, viz., the Philadelphia (see Fig. 23), and, as it is usually skated backwards, we will describe that first.

With the feet slightly apart, the skater starts with the chain step backwards, and allows the right to pass in front of and outside the left, the legs being thus crossed, and the two feet parallel to each other, with the *outsides* of either foot in proximity. From this position the toe of the right and the heel of the left are slightly raised, and the right foot is flipped back with a sudden jerk to the right on a curve of outside forwards, the left following on a curve of inside forwards. This brings the skater round half the circle, and the feet become disengaged, and the subsequent turn, as shown in the diagram, brings the skater to the position he started with, but with the right foot leading, and this enables the left to be brought across, outside of and parallel to the right, and flipped back to the left, and so on. The whole difficulty of the movement consists in flipping back the outside foot, and this is done by a sudden twist of the ankle, the feet being locked while half a revolution is made.

Skated forwards, the Philadelphia is begun as a common grape-vine with the chain step, and, assuming that the right foot is passed in front of the left, the left is brought up outside of and parallel to it, and then, the heels of *both* feet being slightly raised, the left foot is flipped back to the left on a curve of outside back, the right following on a curve of inside back when

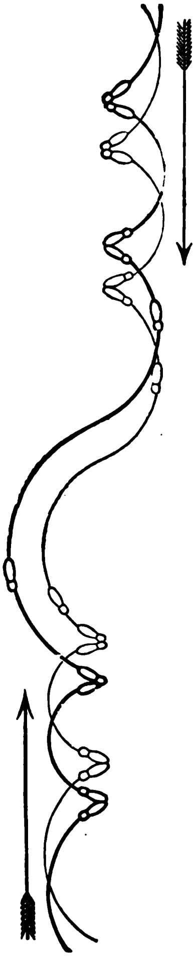

FIG. 23.

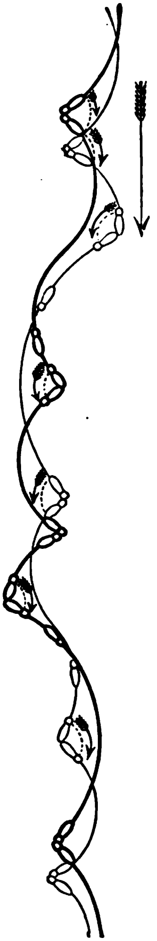

FIG. 24.

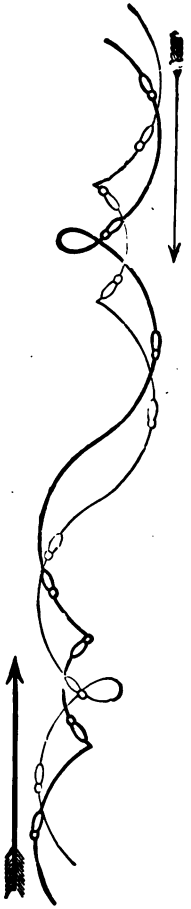

FIG. 25.

FIG. 23.—The Philadelphia Grape-vine. *Backwards*, the right foot is represented by the thick line; *forwards* by the thin.

FIG. 24.—The Philadelphia Spread-eagle Grape-vine. The thick line represents the right foot.

FIG. 25.—The Double and Pennsylvanian Grape-vines. *Forwards*, the right foot is represented by the thick line; *backwards* by the thin.

The thick arrow denotes the forward, the thin arrow the backward movement.

the feet become disengaged, and the subsequent turn is skated as in the turn from backwards to forwards of the single grape-vine. This brings the skater to his original starting position, but with the left leading, by which the movement can be repeated with the rotation to the left, and so on.

The movement skated forwards is more difficult than when done backwards, and not so elegant, as the skater's toes are constantly turned in towards each other, instead of out, as in the same movement done backwards.

An eight, consisting of outside edge backwards, joined by means of the first half of the Philadelphia twist—*i.e.*, the half revolution, with the feet locked—is a very pretty figure. It is done thus: The skater makes a whole circle on the outside back, with, say, the right foot, when he places the left behind, outside of and parallel to the right, and with the feet thus locked makes half a revolution to the right, and taking up the right, skates the other circle of the eight with the left, and so on. The movement is, in fact, a back eight, with the circles tied together with the Philadelphia twist.

There is a variation of the Philadelphia named the Philadelphia spread-eagle grape-vine (Fig. 24). It is begun as the Philadelphia starting backwards; the right foot is flipped back as in that movement, but when half a revolution has been made the rotation is stopped by the left, which has followed the right on a curve of inside forwards, being turned to inside back, thus placing the feet in spread-eagle fashion. When this has been sustained for about a yard, the right is turned to outside back, and the left immediately crosses it and takes up its position outside of and parallel to it, when the movement is repeated with the rotation to the left. This also is a grape-vine that has never before been described.

The Pennsylvanian grape-vine is the last on our list. It is begun as in the Philadelphia, but, instead of making, as in the latter, one half of a whole revolution with the feet locked and the other half with them disengaged, the feet are locked and a whole revolution made with them in that position. For instance, taking the movement as skated forwards, assuming that the right foot is passed in front of the left with the chain step which begins the movement, the left is brought up outside of and parallel to it, and, when thus locked, the toe of the right foot and the heel of the left are raised, and the body swung round a whole revolution to the right on these two pivots; the feet are now disengaged, and the right passed behind, outside of and parallel to the left, and the revolution made to the left, and so on. It is an extremely difficult movement, but both the difficulty and danger are minimised by attempting it at a fairly quick pace rather than slowly, as, the quicker the revolution is made, the quicker the feet get out of the dangerous position of being locked together. In skating the Pennsylvanian backwards, the pivots are reversed, the loop between the cups being made with the toe.

The above-described grape-vines can be skated equally well either on ice or rollers; but the following species of grape-vine, being skated on the toes only, is peculiar to the rollers.

The skater rises on the toes, and with the chain step passes the right in front of the left, and, turning to the right, allows the left to circle round it, the two feet describing two loops. When the skater has described half a revolution, the position of the feet will be similar to their position when skating the Pennsylvanian, viz., the right will be across the left, and the outsides of the feet in proximity (except, of course, that the skater is all the time on the toes only). Resting the whole weight of the body on the right foot, the left continues to circle round it until a whole revolution is made and the feet become disengaged, the result being that a small loop is formed with the right foot and a larger one with the left. (See Fig. 26, the right being represented by the thick line.)

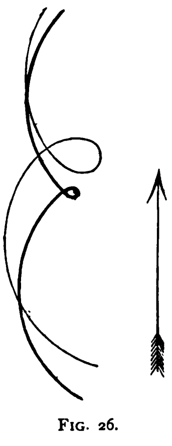
FIG. 26.

In conclusion, we may say without fear of contradiction that any one who will take the trouble necessary to make himself a *good* figure-skater on rollers will, without doubt, take his place as a *first-rate* figure-skater on ice. There is a good deal of persistent drudgery to go through before sufficient skill is acquired to render figure skating on rollers a real pleasure, but the sticking to *one* movement till it is conquered will of itself create interest, and give encouragement to attempt other and greater difficulties.

CHAPTER VI.

ON SKATING RINKS AND THEIR FORMATION.

THE name of "rink," as applied to inclosed or open spaces for skating, comes to us from Canada. The term "rink" is of Scotch origin, and is used, we believe, in the game of curling, to designate the space over which the curling-stones are propelled; and it is probable that many years ago Scottish officers quartered in Canada indulged in their favourite pastime of curling, and christened the inclosed space in which the game was carried on by the name of "rink," which has survived to designate pieces of ice inclosed for skating.

Of course in a climate such as ours covered rinks similar to those of Canada are out of the question, but we can procure many extra days' skating by having shallow pieces of water, which freeze more readily than deep, because more quickly chilled to the required temperature. We are not at all prepared to say that ice when once formed of a thickness of, say three inches, would not be preserved much longer and in better condition if it were covered with a roof of canvas, the sides and ends being open. The covering would protect the ice not only from snow, which when melting and being absorbed into the surface has the effect of rendering it rotten and soft, but also from the sun, which also renders the ice soft, but does not rot it to the extent that melted snow does.

Skating has now become so universal amongst all classes, and the waters in the vicinity of large towns available for skating are so crowded, that it is almost incumbent on those who wish to practise figure-skating that they should combine *and obtain* some private ground where a shallow basin could be constructed, and filled with water, so as to form a practice ground in the winter.

As a rule, few people think of skating till the ice is actually formed, and if skating were the only use to which such a private ground could be put, it would perhaps be difficult to raise the necessary funds; but if the ground selected for the intended rink be composed of stiff brown clay, similar to the clay of the north side of London, the winter skating ground can be used in summer by either the archer or the lawn-tennis player. The funds of a skating club may be insufficient to form a rink; the lawn-tennis or archery club may be wanting a regular practice ground, and may be deterred from obtaining it by the expense; but if the two societies agree to club together, the united funds may be sufficient to obtain the desired practice ground, and the members of the two societies can enjoy their respective pastimes without in any way clashing. As an example, the members of the Royal Toxophilite Society, who are lessees under the Crown of a large piece of ground situate in the Regent's Park, accepted in the year 1869 the London Skating Club as their under-tenants during a period in each year, commencing with the 15th of November and terminating on the 1st of March, being that portion of the year when archery is practised but little. A space sufficient for two sets of targets has been reserved on one side of the artificial basin which has been made for the reception of the water; thus the enthusiastic bowman can, if he feels so disposed, continue his practice during the period when the basin, which in summer forms the archery ground, is covered with water.

The area of the Skating Club rink is about 150 yards in length by 50 yards in breadth, and is surrounded by banks some three feet high. These banks contain a hearting of puddle, about two feet thick, and are covered with turf, and so present no unsightly appearance. Between these banks the turf has been stripped, the bed carefully levelled, with a slope from the centre to each side of four inches, and the turf relaid.

As the clay of the Regent's Park is of such a nature that when swelled by wetting it will retain water without puddling no puddling was necessary; and indeed, if the clay on which it is intended to form a rink will not retain water without puddling the bed, it is better not to attempt to make a rink, as the expense of taking out sufficient earth in order to place the puddle at least ten inches below the surface, would be very great. And even with ten inches of soil between the top of the puddle and the surface, there is still the tendency during a hot summer for the puddle to become dry and consequently cracked. If the puddle becomes cracked, no amount of water will mend the crack by causing the puddle to swell: the only remedy is to turn over the puddle, and this must be done over the whole area, as with ten inches of soil between the puddle and the surface, it is impossible to ascertain whereabouts the crack exists. If therefore the soil on which it is proposed to construct a rink be porous, the best plan is to use concrete in the manner hereafter described.

Running round the whole of the inside of the rink, at the base of the banks, is a six-inch pipe, having openings to the surface by means of gratings at every ten or twelve yards. This pipe communicates with a hatchway or sluice, situate at the lower end of the ground. When it is wished to fill the rink the sluice is shut, and the water, which is supplied by the West Middlesex Water-works Company, is allowed to flow into a tank situate at the upper end of the ground, with which the pipe running round the ground communicates, and so on to the ground up through the various gratings.

The slope of four inches from the centre has the effect of partially draining the surface after the water has been run off, but in order that the process of drying may go on quickly, a large quantity of surface drain-pipes have been laid down, and these surface pipes empty themselves into the six-inch pipe running round the ground. So long as the sluice at the hatchway is shut these surface-drains do not act; but on drawing the sluice at the end of the winter, as soon as the water gets below their level, they begin their work of drying the ground, and in the course of a few days the turf, which had been submerged for three months and a half, is ready for the targets of the Toxophilites.

For an archery ground a slope of four inches in twenty-five yards is no detriment whatever, and practically it is of little importance in a lawn-tennis ground; but if it were considered a disadvantage, the slope could be dispensed with altogether, and the ground dried simply by surface-drains, or a gentle slope from one side of the ground to the other might be permitted, instead of from the centre. A slope from the centre is better than one running from one side of the ground to the other, as the depth of water is more uniform. It will be evident that with a slope of four inches from the centre, assuming the depth of the water at the shallowest part, *i.e.* the centre, to be eight inches, the greatest depth at the sides would be twelve; but if the slope be all one way, one inch of water at the shallower side will necessitate sixteen inches at the deeper.

It is generally supposed that to submerge turf for three months is bad for it, but experience has proved to us that it does it no harm whatever, and indeed rather improves it if the winter be at all a severe one, as the water keeps the turf at an even temperature, and while so covered is never subjected to greater cold than 40 deg., whereas grass not so covered is liable to feel the effects of the greatest cold we may have during the winter.

We have been rather disappointed by the way in which ice forms on this shallow piece of water. The first severe frost we had after the formation of the rink was in 1869, and being quite ignorant as to what depth of water was best, we jumped to the conclusion that the shallower it was the quicker it would freeze, as a shallow body of water would chill more readily than a large quantity, to 40 deg., a temperature at which the surface will congeal.

Congelation certainly takes place on a shallow quicker than on a deep pool, but the ice does not thicken on the shallow water, and this is probably owing to its near proximity to the warm earth.

In 1869 the ice on the rink was never within one-and-a-half inches as thick as on the adjoining water of the Regent's Park, which is about four feet deep, and has a concrete bottom.

In subsequent years we have increased the depth in the shallowest part to not less than eight inches, and the ice, with less severe frost, has been thicker than in 1869.

It is highly necessary that the ice on a rink should be sufficiently thick to bear the weight to be placed on it without any great strain, as, the area being a confined one, the skaters cannot, as on a large piece of water, move off to another spot when signs of weakness appear.

Under the head of "Ice" will be found directions for preserving and renewing the surface when damaged by constant skating.

With reference to the cost of constructing such a rink as that of the Skating Club, regard must be had to the natural "lie" of the ground, and the power of obtaining water without difficulty. The idea of forming the Skating Club rink originated by observing the Curling Club ponds in the north. In these ponds a burn is simply (as the winter approaches) turned into a shallow basin formed by running a bank round an adjoining meadow.

There are hundreds of spots in England that could be made available for skating by simply running banks round land lying contiguous to small streams, which for the purpose of filling the rink must be temporarily dammed up.

As a commercial speculation an entrance fee of one shilling payable by each person using the ice would, in anything like a long winter, soon repay the cost of constructing the necessary banks. Enterprising innkeepers in the vicinity of large towns should look to this. And on almost every estate there exists a small stream that could be made available for filling a rink, and on such a shallow piece of water the Squire and his youngsters home for the Christmas holidays could disport themselves without that danger which exists from skating on the usually deep ponds that are now resorted to.

The composite rink—that is, the shallow basin capable of holding water in winter, and available for an archery, lawn-tennis, or croquet ground in summer—is undoubtedly the best, as it serves more than one purpose; but it can only be constructed where the ground is sufficiently tenacious to retain the water without puddling. On a gravel or sandy soil the process of forming a rink is quite different, is more expensive, and can be used simply as a rink or tennis court.

We are indebted to the Rev. James Pycroft (the author of

"The Cricket Field," &c.) for the following account of the formation of a concrete rink which he has constructed at Brighton. He says:—

"The ground, which was an acre in extent, and in the shape of a long parallelogram, was composed of stiff loam, not of itself retentive of water, and had an inclination of about one foot in thirty.

"To make an acre of sloping ground hold water, and virtually with a dam along the whole of one side and along nearly the whole of the other, and this, too, with much sifted and made ground, was the problem.

"The projected rink must be quite water-tight; the loss of half-an-inch of water a day would be a loss of 10*s.* a day. The rent of the land was 50*l.* a year for four years, and I had to venture above 3,000*l.* on my success. It must be borne in mind that the first step was to excavate above 122 yards by 32 yards, say 4,000 square yards, and the depth for water alone must be a foot and a half. To solve this problem I consulted the best authorities amongst practical men.

"One advised two feet of concrete laid on a foundation of burnt brick; but this would require nearly four feet of excavation. Impossible!

"The next advised two feet of clay, protected by one of earth to avoid cracking. About five feet of excavation!

"Another, joining in the general warning from the small garden ponds which had leaked and utterly failed, said he had only succeeded by a double floor of bricks. As well attempt to find bricks for a pyramid at once!

"At last Mr. North, a well-known contractor at Brighton, said he would trust to six inches of lime concrete with two inches of Portland cement; and Mr. Edward Thatcher, a young engineer in the employ of Messrs. Chapple, pointed to baths that had been made on that principle, but advised ten inches of concrete instead of six, because concrete requires a certain mass to ensure a proper quality.

"The population of Brighton, above 100,000 at all times, would ensure skaters and spectators enough to justify a large outlay. The risk was less in the revenue, than in failing altogether. Therefore, as regards expense, the plan might be adopted, provided it was very carefully carried out; otherwise, one weak spot might spoil the whole. We proceeded thus:—

"1. The rink was surrounded by a concrete and cemented wall, going down two-and-a-half feet to a sound foundation, and two feet thick, and one foot five inches above ground.

"2. The ground was excavated and levelled two feet seven inches deep, and rolled with a heavy roller; and still further to consolidate the ground, the heaps of pebbles to be mixed into concrete were thrown down and left till wanted, just where the earth had been sifted and was liable to sink.

"3. The sea-pebbles, or 'beach,' were sifted through a sieve to ensure the finer quality of the concrete, and mixed with lime; cement would have been much dearer. The proportion of lime to beach in the concrete was one to five, not one to six as with concrete to foundations. If you have a perfectly firm foundation any kind of rough cement may do, and perhaps less than ten inches of it to support the cement, for concrete is not impervious, and it is the cement which retains the water; but with made earth—and you cannot level without it—fine concrete is essential, and not much more costly than the coarser sort.

"4. Ten-inch boards were set up on end, and the space between duly filled with concrete and scraped off level with the boards, so as to insure a fair ten inches of concrete.

"5. By the same means and by two-inch boards, two inches of cement were ensured when the concrete had had full time to dry and harden.

"6. The cement was rendered over smooth by still finer cement, the whole work being as exact as a balcony or kitchen floor. The best Portland cement only was used.

"7. The rink was so levelled as to fall three inches from end to end, and one inch from side to side, to drain into one corner where a deep dry well in the loose chalk was made for draining off the water when necessary for cleansing or repairs.

"Around the rink so made is a path, about six feet broad on the longer sides, and twelve feet at each end.

"The rink is of actual water, 123 yards long, and thirty-two yards broad.

"The success is perfect. There has been no appreciable loss of water, and no sinking.

"As to the cost, it was much favoured by the contractor, and may be roughly stated at 1,500*l.*

"The curling rink at the Crystal Palace is made of asphalte, which at Brighton would cost 5*s.* a square yard."

The suggestion which we made to Mr. Pycroft, that he should run off the water during the summer and obtain a concession from Mr. Plimpton to use the roller-skates, was adopted, and with great success, thousands of people trying the rollers for the first time at the Hove Rink. The numerous open-air concrete and asphalte rinks that have been deserted by the roller-skaters can be used as ice-rinks in the winter by putting about three-quarters of an inch of water on. This readily freezes with about 7° of frost, and, being solid to the bottom, can be skated on at once. A puddled clay-bank of some two inches may be used to retain the water where necessary. The ice can be thickened each night, and the surface renewed by watering; warm water being preferable to cold.

There is another method of obtaining ice artificially, which we are assured is far superior to any rink containing water, inasmuch as with sufficient frost to form one inch of ice on water, three inches of ice may be built up by the following plan:—

The surface of the ground on which it may be wished to form ice should first be either paved with brick, or flagged with stone, or asphalted. On the top of this, wet puddle, composed of clay wetted and kneaded into the consistency of thick paste, should be placed to the depth of three inches.

This part of the operation may be completed in the early part of November, and the wet puddle kept moist by occasionally watering it with a watering-pot having a fine rose. The first night's frost will freeze the puddle into a solid mass; and if some sort of covering be placed during the day over the area to be converted into ice, so as to prevent the sun affecting the frozen puddle, the process of building up a surface of ice can be commenced as soon as the thermometer shows two or three degrees of frost. A watering-pot with a fine rose should now be used, and the surface of the frozen puddle sprinkled with water, which will immediately freeze, and the watering should be repeated until a coating of pure ice of an inch or two inches in thickness is superadded to the puddle.

In the course of a few hours an area of ten yards square may be thus covered with ice two inches thick, and if properly drained during a thaw, it is astonishing for how long a time the surface will be available for skating after the thaw has commenced.

In laying the puddle great care should be taken to get the surface level, as, if uneven, the ice surface will partake of its inequalities.

What a charming prospect this opens out to the enthusiastic skater who dwells in the suburban semi-detached villa! The back garden can be converted into a rink, and morning and evening skating indulged in, before and after the business of the day!

After the prospect of further skating is at an end, the clay forming the puddle can be stored in a corner of the garden, where it can remain until wanted for the next year.

The bed of the rink can be boarded, or better still, asphalted, so as to allow of roller-skating during the summer months.

CHAPTER VII.

GENERAL PRACTICAL DIRECTIONS.

THE plan of teaching we wish to carry out is to educate the feet in the most thorough manner, as to the means of getting impulse under all practicable circumstances, and then to work out this impulse in an appropriate attitude, in a balanced position on one foot, introducing at various times all the changes it is practicable to execute, and with as little loss from friction as possible, and to concentrate in these directions a groundwork of instruction to which the skater may always refer when in doubt or difficulty. As each movement is described in its proper place, we shall add any further instruction that the particular nature of it may require. The main body of directions necessary, and indeed imperative, for the skater to know, are contained in the following group.

1.—The two edges of a skate are called, from long habit, inside and outside (but that they are virtually one in principle has already been explained in the Theory). The inside edge is on the right of the left, and the left of the right skate. The outside edge is on the right of the right and the left of the left skate, whether the motion be forwards or backwards. The movements of the skate are four, viz., the inside forwards, the inside backwards, the outside forwards, and the outside backwards. It is necessary to learn at once, then, in order to simplify our after descriptions, that—

A represents inside forwards.
B „ „ backwards.
C represents outside forwards.
D „ „ backwards.

Now this can be done in a very short time, and when learnt should never be forgotten.

The four turns which can be made on or from these edges will therefore be designated, for the single variety—

Turn A.
Turn B.
Turn C.
Turn D.

And those containing more turns than one, according to their number, thus—

Two turns A, B, C or D, as the case may be.

Or,—

Three turns A, B, C or D.

Or,—

Four turns A, B, C or D.

Or,—

Five turns A, B, C or D.

The combination of two edges, as in the serpentine line, will fall under a similar arrangement; for instance—

Serpentine A.
Serpentine B.
Serpentine C.
Serpentine D.

The eight Q figures also will be—

Q A.
Q B.
Q C.
Q D.
Reverse Q A.
Reverse Q B.
Reverse Q C.
Reverse Q D.

2.—Impulse is gained by what is called striking, which means placing the skate in such an angular position, say 45°, as prevents its slipping on the ice; by such a position a basis of support is gained from which the thrust of the foot or start *may be taken*: this impulse is obtained from the fore part of the skate-iron, but when the motion is taken up by the other foot, it is the heel end of the skate that mainly supports the skater, and on which he is principally balanced.

3.—There are two distinct ways of striking: that which is obtained from the inside, and that from the outside edge. When using the inside stroke forwards, the feet are in their natural position, viz. turned out; but in back skating on the inside edge, it is at once apparent that the feet must be turned in. Now this is rather unfortunate, because the position, although very effective, is not very elegant; but for the purpose of educating the feet we must make use of it, as it smoothes the path to other aids, and indeed cannot be dispensed with.

In using the stroke to be obtained from the outside, the legs must be crossed one over the other when proceeding in a forward, and one behind the other when proceeding in a backward direction, in order that the striking foot may be put down in the necessary position.

A little further observation, and we notice that it is possible to get a stroke from the outside of one foot to the inside of the other, although the attitude is most peculiar, and perhaps this kind of propulsion is only useful to us as another means of educating our feet in impulse obtained by striking in a new position.

The inside strokes are by far the most powerful, but those on the outside are nevertheless very good, especially when they are assisted by close attention to the momentum and weight of the body, as discussed under Direction No. 9.

In addition to the two edges, there is the flat of the iron for travelling on. This is rarely used in figure-skating except as the connecting link that unites the inside and outside edges. To sum up, then, we can make use of the inside and outside indiscriminately, either as a means of impulse, or to travel on, but the flat of the iron only for the latter purpose.

4.—To make a distinction, we will call the leg upon which the travelling is conducted the employed one, and the one that gives the stroke the unemployed one.

In taking the stroke the knees become bent, but that belonging to the employed leg must be straightened immediately the balance is gained, or even in the act of gaining the balance.

Now this straightening of the knee is the most important matter in the career, not only of the youthful, but of the adult skater; it may be set down as an absolute fact, that no man will ever be a really fine skater who cannot do this, for it causes the muscles to hold the ankle, knee, and entire limb rigid, and therefore ensures that great desideratum, a steady balance. It is also essentially necessary, too, on account of the figure-skater being rarely on two feet at a time, and it is one of the two chief means of attaining an upright carriage.

5.—In forward skating on the inside edge, let the body be turned partially sideways; that is to say, 75° away from a temporary position, which we will call "full front." The circle consisting of 360°, it will absorb 90° to turn the body full sideways from full front, so that we do not want so many; we only require 75° for the purpose of obtaining a partially sideways attitude. Starting, then, with the body placed in this position, the employed or travelling leg and foot remain full front, the unemployed one hangs behind, somewhat in file, as it were, with the foot turned out not less than 45°, and as many more as possible, the toe of the skate held just off the ice, and pointed a trifle down, and the heels of both feet being as near together as practicable; or the unemployed foot may be placed over a little to the right behind, with the toe to the heel of the employed foot: these positions are given in Fig 27. These attitudes are both very good. We say distinctly that there are two chief means of attaining an upright carriage: straightening the knee is one, and the ability to approximate the heels is the other. Without the combination of these two most excellent qualities, no skater will ever attain the first rank.

For the attitude for inside backwards the number of degrees turned away from full front will be the same, viz. 75°.

For outside forwards, 60°.

For outside backwards, in order to get the body completely round, we shall require no less than 105°. In both back movements the head and eyes must be turned to correspond with the change of direction; for although the skate travels backwards, we require the body so placed that it in reality appears to go forwards.

In order that the learner may thoroughly understand all these sideway attitudes, we refer him to Figs. 27 and 28; and supposing him to be taking up a temporary position of full front, and keeping his right foot so, let him turn the body and left leg to the left, as denoted by the arrows, until he absorbs 60°, 75°, or 105° of the circle, according as he wishes to arrange himself for the inside or outside forwards or back-

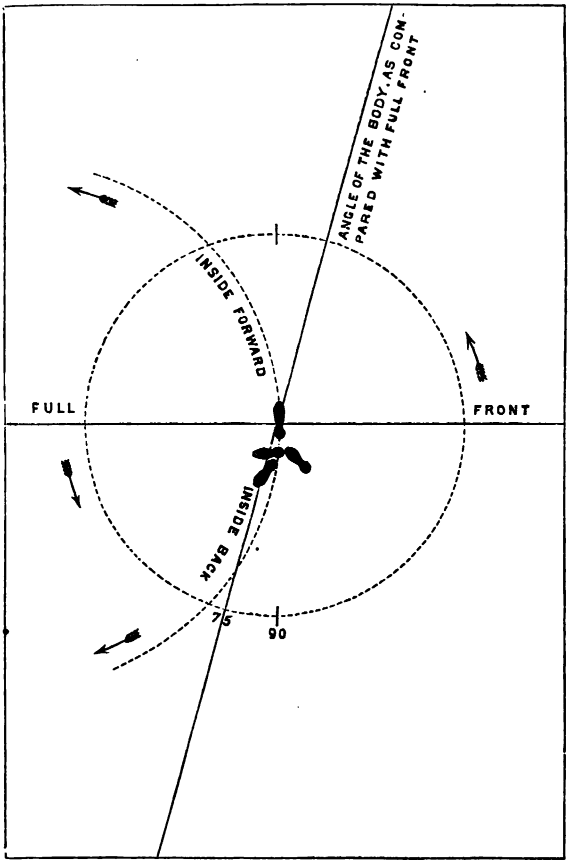

FIG. 27.—Plan of the Sideways Attitude on the right foot, when the intended curves of inside forwards or backwards are just commencing; also three positions for the unemployed foot.

wards, altering the direction of the head and eyes, as previously alluded to, according to the respective intended curve.

To get the attitude for the left leg, the body and right leg will necessarily be turned to the right 60°, 75°, or 105°. To avoid confusion we have not shown this attitude for the left leg in the diagrams, as it is simply the reverse of the other.

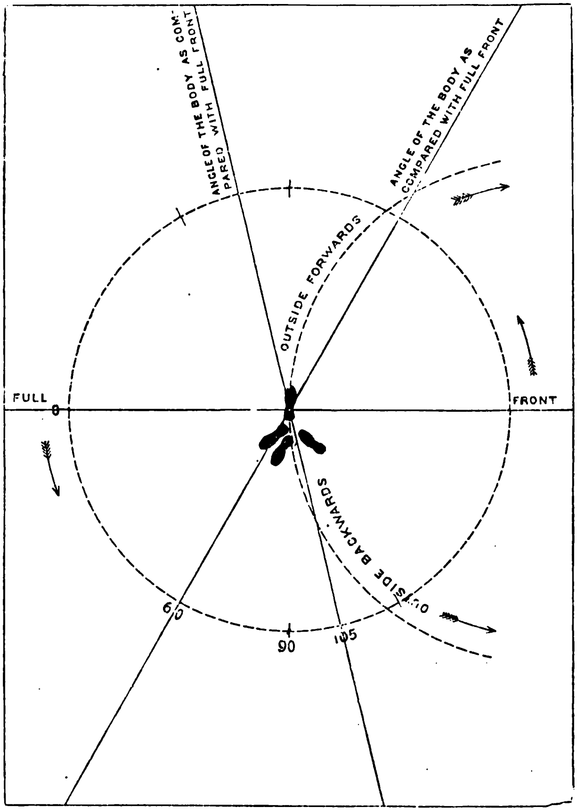
ANGLE OF THE BODY AS COMPARED WITH FULL FRONT
ANGLE OF THE BODY AS COMPARED WITH FULL FRONT
OUTSIDE FORWARDS
OUTSIDE BACKWARDS
FULL
0
FRONT
60
90
105

FIG. 28.—Plan of the Sideways Attitude on the right foot, when the intended curves of outside forwards or backwards are just commencing; also three positions for the unemployed foot.

To sum up the advantages of this partially sideways attitude: it adds to the impulse when changes are effected, it facilitates the turns, it brings into use and beautifies the much-abused and long-discarded inside edge, it causes the friction of the air against the body to be very much less, and it enables the skater to employ his resources more advantageously.

6.—The unemployed leg must be kept in an easy manner rather behind, yet in file, as it were, the heels nearly together, and the toe of the unemployed foot just off the ice, and therefore pointed down. Now when about to change feet, the unemployed leg should be brought forwards or backwards, as the case may be, by a gradual movement, commenced therefore some seconds before the required change; jerks or starts, which are not at all conducive to grace, will thus be avoided.

The arm corresponding to the leg employed should be raised, but not too high, and never, we think, on a level with the shoulder, and the elbow should be bent; the hand also should be carefully attended to; it must not be clenched, nor modelled after the manner of a wayside finger-post. This arm will thus slightly and gracefully move to assist in correcting and maintaining the balance when changes are taking place.

The other arm, or that which belongs to the unemployed leg, must hang easily down at a slight angle, away from, yet in file with, the body, and not raised nearly so high as the other, and it need not be moved about unless absolutely necessary for the purposes of balancing, as it should be the aim of the skater to keep it quiet.

The unemployed leg and arm are thus near the body, and are balanced by the employed arm, which is slightly away. We often see skaters stooping very much, and what follows as a necessary consequence? This: that the unemployed leg must be thrust out behind nearly horizontally, and consequently far away from the ice, and the unemployed arm must partake of an attitude alike in its nature, in order to effect the necessary counterpoise; all this being radically wrong, as may be seen by contrasting the elegance and effectiveness of one attitude with the ugliness of the other. And ugliness is not its worst quality only, as it has also the sad defect of hindering, hampering, and retarding the skater's actions.

7.—The changes of attitudes as to the arms and legs might all be practised with a pair of roller-skates, in a room or gymnasium, where also, by a central post, and long leather trap depending from it and attached to the learner's waist, it would be easy for the would-be figure-skater to study the effect of the different inclinations of the body without fear, and with an immense saving of valuable time on the ice. Thus standing in the positions described in Direction 5, let the skater practise the attitude for each foot respectively; then let him notice the slight alteration in the direction of the head and eyes, which becomes necessary when the curve is intended to be of the inside or outside character. Then let him observe how the striking foot will require to be moved into its place immediately its work is done (see Figs. 29, 31, 33, 35, 37, 39). At the same time let him see that the changes required of the arms are carried out simultaneously and harmoniously with those of the legs, for the alternate stroke. The crossed positions, or those in which impulse is obtained from the outside, will also require practice; and when these outside strokes are intended, the skater can refer to the description subsequently given for a further insight into their character.

8.—In leaning over to catch an edge, the foot, leg, and body must form an imaginary straight rigid line, placed on either side, as the case may be, and inclining away from the perpendicular, and held in that position by the laws we have discussed in the Theory. There should be no attempt at coaxing the edge by a twist of the ankle, for this cannot give the true steady balance which is attained by using the above-mentioned position, because, the imaginary rigid straight line being destroyed by such bending of the ankle, the position will be imperfect.

9.—The impulse gained by the act of striking can be vastly increased by a proper use of the momentum of the body. It is the application of this to other inherent good qualities that educates a man up to being a first-rate, graceful, and powerful skater.

The weight of the body should be well thrown into the skate at the instant of effecting the stroke, or of making a turn or change. The new edge then taken will, by the natural rebound of such an excess of pressure, be executed with far more lightness and power than it otherwise would be.

In order to carry this out it is necessary to give a slight elastic spring (yet never removing the skate from the ice), almost imperceptible, and in reality forming a part and parcel of the movement. It is not easy to explain, but, in a few words, may be described as a kind of *vertical momentum* of the body.

The next sort of impulse is obtained by a horizontal motion, inclining the body to the direction opposite to that in which the skater is advancing, and then at the instant of the stroke throwing it in the advancing direction, and raising it in a few seconds smoothly to the upright attitude. For example, supposing the skater wishes to make a very vigorous stroke, or a succession of them, forwards or backwards, he would whilst on one skate gradually draw himself not only upright, but even inclining a little backwards or forwards, and at the same time he would be preparing for the above-mentioned slight spring the instant before the stroke; the body would then be inclined suddenly yet gracefully forwards (or backwards, if the motion be in that direction), and the weight of the body at the same time thrown into the striking foot; the new edge would then be taken easily and lightly, but at the same time with great force. In back-skating it is just the same, and it is by such means that the skater is enabled almost to disguise the stroke and skim over the ice, and keep up a long and difficult movement with very little loss of the impulse derived from the original stroke. Any skater deficient in these two great aids is soon "pumped out." Some imagine that skating to be graceful must be entirely slow and stately, and that speed will destroy grace of carriage. How narrow this reasoning! We will take one instance. The flight of the swift is estimated at 80 or even 100 miles per hour at times. Every one must have watched its turns, curves, and circles, and how often have they been without elegance and grace? In short, grace of carriage in a skater can in our opinion be enhanced more by alterations, variations, and contrasts of speed, than in any other manner. But in making use of speed the skater must be as *au fait* at the figures thus done, and do them with the same ease as if he were skating them slowly.

10.—The inside and outside edge, both forwards and backwards, should be learnt on a very large scale, even at the commencement. Not so, however, with the turns or threes, which can be begun with little impulse and of small size, extending the size of them as progress is made. The skater must not forget that skating can never be too large to be good.

11.—In making the forward turns or threes, the weight of the body should rest on the fore part of the skate-iron; in making the backward turns, on the heel. (By forward turns we mean those from a forward edge to a back edge; by backward turns, those from a back edge to a forward edge.) Again, the weight of the body should be eased off at the moment of change, by using the above-described slight imperceptible spring, the instant before. This will diminish the friction of the iron upon the ice.

12.—Whatever practice is done once on the right foot, in the way of figures, should be repeated twice on the left, that is assuming the left to be the weaker foot. The skater will thus become equally able on both feet.

This habit of practice must be early acquired, as there is a strong tendency in all young, and even adult, skaters to use the right or strong leg very much more than the left or weaker: this naturally causes a great defect in the learner by making him better on one leg than the other, and thus renders him unable to take his part in good combined figure-skating, which is always conducted as much on one leg as the other.

The learner should observe all good skaters most closely at every opportunity, and there is no reason why he should not go through a course of drill when the ice does not bear; let him don his roller-skates, and learn what to do. Look at the volunteer rifleman: he learns to shoot in proper position (which goes far to make a good marksman) before he fires a shot at the target. Let us take a lesson from Hythe, then. We can certainly say that a good skater is generally a sufficiently "good fellow" to willingly assist with his advice and example any tyro who is really anxious to get on.

To summarize the main points that will constitute a first-class-skater, as treated of in these directions, we have—

1. The straightened knee.
2. Approximation of the heels.

3. The semi-sideways position of the body.
4. The vertical momentum.
5. The horizontal momentum.
6. The forward turns on the toe.
7. The backward turns on the heel.
8. Double practice for the left or weaker leg.

Qualities which give necessarily—

1 & 2. An upright carriage.
3. { A graceful unpretending attitude.
   A steady and perfect balance.
4 & 5. Powerful and accurate skating.
6 & 7. Facilities in making turns.
8. Equality of power on either leg.

CHAPTER VIII.

ICE.

THERE is perhaps no more wonderful provision in nature than the fact that water condenses with cold up to a certain temperature, and then, unlike other bodies, expands as the cold increases.

Count Rumford, in his "Essay on the Manner in which Heat is Propagated in Fluids," says :—

"All bodies are condensed by cold, *water only excepted:*" and he goes on to describe the wonderful effects produced in consequence of this particular law. He says : "Though in temperature above blood heat, the expansion of water with heat is very considerable, yet in the neighbourhood of the freezing-point it is almost nothing. And what is still more remarkable, as it is an exception to one of the most general laws of nature with which we are acquainted, when in cooling it comes to within 8° or 9° of Fahrenheit's scale of the freezing-point, instead of going on to be further condensed as it loses more of its heat, it actually expands as it grows colder, and continues to expand more and more as it grows more cooled."

After enlarging on the subject he proceeds thus :—"As nourishment and life are conveyed to all living creatures through the medium of water, *pure living* water, to preserve life it was absolutely necessary to preserve a great quantity of water in a fluid state in winter as well as in summer. But in cold climates the temperature of the atmosphere during many months of the year is so much below the freezing-point, that had not measures been taken to prevent so fatal an accident, *all* the water would have inevitably been changed into ice, which would infallibly have caused the destruction of every living thing. Extraordinary measures therefore were necessary for preserving in a liquid state as much of the water existing in these climates as is indispensably necessary for the preservation of animal and vegetable life, and this could only be done by contriving matters so as to prevent this water from parting with its heat to the cold atmosphere.

"It has been shown, I believe I may venture to say proved in the most satisfactory way, that liquids part with their heat *only* in consequence of their internal motion, and that the more rapid those motions are, the more rapid is the communication of the heat; that these motions are produced by the change of the specific gravity of the liquid occasioned by the change of temperature, and of course that they are more rapid as the specific gravity of the liquid is more changed by any great change of temperature. But it has been shown that the change in the specific gravity of water is extremely small which takes place in any given change of temperature *below the mean temperature of the atmosphere*, particularly when the temperature of the water is near the freezing-point; and hence it follows that water must give off its heat very slowly when it is near freezing.

"But this is not all. There is a still more extraordinary and in its consequences more wonderful circumstance which remains to be noticed. When water is cooled to within 8° or 9° of the freezing-point, it not only ceases to be further condensed, but is actually expanded by further diminution of its heat, and this expansion goes on as the heat is diminished as long as the water can be kept fluid, and when it is changed into ice it expands even still more, and the ice floats on the surface of the uncongealed liquid."

Count Rumford next shows how very powerfully this wonderful contrivance tends to retard the cooling of water where it is exposed to a cool atmosphere:—"It is well known that there is no communication of heat between two bodies so long as they are both at the same temperature; but it is likewise known that the tendency of heat to pass from a hot body into one which is colder, with which it is in contact, is greater as the difference is greater in the temperature of the two bodies. Suppose now that a mass of very cold air reposes on the quiet surface of a large lake of fresh water at the temperature of 55° of Fahrenheit's thermometer. The particles of water at the surface, on giving off a part of their heat to the cold air with which they are in contact, and in consequence of this loss of heat becoming specifically heavier than those hotter particles on which they repose, must of course descend. This descent of the particles which have been cooled necessarily forces other hotter particles to the surface, and these, being cooled in their turn, bend their course downwards, and the whole mass of water is put in motion and continues in motion as long as the process of cooling goes on.

"As soon as the water in cooling has arrived at the temperature of about 40°, as at that temperature it ceases to be further condensed, its internal motion ceases, and those of its particles which happen to be at its surface remain there, and after being cooled down to the freezing-point, they give off their latent heat, and ice begins to be formed.

"As soon as the surface of the water is covered with ice, the communication of heat from the water to the atmosphere is rendered extremely slow and difficult; for ice, being *a bad conductor of heat,* forms a very warm covering to the water, and moreover it prevents the water from being agitated by the wind. Further, as the temperature of the ice at its lower surface is always very nearly the same as that of the particles of liquid water with which it is in contact, the warmer particles of the fluid in consequence of their greater specific gravity taking their places below, the communication of heat between the water and the ice is necessarily very slow on that account.

"As soon as the upper surface of the ice is covered with snow (which commonly happens soon after the ice is formed), there is an additional and very powerful obstacle to prevent the escape of the heat out of the water, and though the most intense cold may reign in the atmosphere, the increase of the thickness of the ice will be very slow."

The specific gravity of ice is less than that of water, in the ratio of 92 to 100.

The degree of expansion of water in the state of ice is $\frac{1}{10}$ of its volume. Water evaporates almost as fast when frozen *as when liquid,* and it is this evaporation which renders a piece of ice, that has been much cut up by skating, comparatively smooth if allowed to remain some time without being skated upon.

Ice generally forms on the surface of the water. It has been observed in the northern parts of Germany that there are three kinds of ice:—

1. That which forms on the surface.
2. Another kind formed in the middle of the water, resembling nuclei or small hail.
3. The ground ice, which is produced at the bottom, especially where there is any fibrous substance to which it may adhere. This is full of cells like a wasp's nest, but much less regular, and performs many strange effects in bringing up heavy bodies from the bottom by means of its inferiority in specific gravity. The ice which forms in the middle of the water rises to the top, and then unites in large masses; but the formation of ground ice only takes place in violent and sudden colds, where the water is shallow and the surface disturbed in such a manner that the congelation cannot take place.

We have known cases in England of ground ice forming in running streams, and the effect has been to tear up the weeds, which floated away, leaving the bottom of the stream quite bare.

A very severe frost, without snow or wind, will produce ice intensely hard, very dark in colour, generally a blackish green, yet also very clear, very much like the colour of wine-bottle glass; or if it is frozen at a comparatively high temperature, say three or four degrees, and if there is at the time of congelation no wind, it may have quite a greenish caste, and be of a greasy nature. We are aware, of course, that both such kinds of ice are in themselves nearly colourless; yet that they do, owing to various causes, appear to have these well-known characteristics, is a fact which will be acknowledged by observing skaters.

This dark-coloured ice is the ice *par excellence* upon which the accomplished skater delights to disport himself; but it is not good for a beginner who has not yet obtained the command of his skates; so he had better select ice, if possible, a trifle less smooth and hard.

Snow ice, as we call it, is sometimes very rough and weak, as it is full of flakes, hollows, and air-bubbles. But should there be a rapid thaw, followed by a return of frost without snow, very good ice is formed, the colour being grey or white, and the surface level, and not too hard, unless frozen at a very low temperature.

As to the thickness at which ice becomes bearable, we, believe that one inch in thickness of the black clear variety will under favourable circumstances be safe for a few skaters, not congregating together; three-quarters of an inch will bear the generally light weight of boys of fourteen years; but the strength of ice depends greatly on its density. An inch thick, frozen with the thermometer at, say 20°, will have greater bearing power than an inch and a half frozen with the thermometer at 28°, and will last much longer than the less dense sort when the thaw comes.

The snow ice is very treacherous, and must be of considerable thickness, say two inches, before it is safe, and then only so long as the process of freezing is going on. Snow ice, being studded with air-bubbles, becomes, even when very thick, unsafe in a thaw, and gives no warning of the breaking-up, as the dark-coloured clear ice does.

The *Montreal Gazette*, alluding to the thickness of ice and its strength, says: "Ice two inches thick will bear infantry; four inches, cavalry, with light guns; six inches, heavy field guns; and eight inches, the heaviest siege guns, with 1,000 lbs. to the square inch:" but we must remember that ice at Montreal is frozen at a much lower temperature than it is here, and consequently is much denser.

We have always made it a rule to go in search of bearing ice the morning after the second night's frost, and never to take for granted the positive assurance of others, "that it could not bear yet." We have thus got many an hour's safe skating.

We are aware that we shall be called to task by fathers and mothers of families for thus giving our sanction, as it were, to boys to go on the ice prematurely, and we therefore wish to express more fully our views; we say then to them: "Your boys and girls will want to go on the ice: don't deny them the *healthy* amusement of learning to skate, but let it be under your own supervision. Make it one of your pleasing duties towards them to look out some safe pond and safe ice upon which you can conscientiously permit them to go at an early period of frost; let it be only with your sanction that any other piece of ice is chosen," and we cannot think that any harm will come to them.

Where then can we find this safe ice at an early period? On marshy exposed commons, which are yet screened from the disturbing winds by gorse, &c., it is possible to find bearing ice at a remarkably early period of frost; the water on such wet ground is, as a rule, only a few inches deep: we do not, of course, allude to ponds or pools in such situations, as these are generally flooded gravel pits, perhaps six or twelve feet deep, and therefore very dangerous,—of such let every one beware.

A shallow pond, situated on high ground, and yet in a circular depression or amphitheatre, will generally freeze rapidly. A little previous inquiry and experiment before the frosts set in may often be the cause of a day's safe amusement to the young; and is it not much better that they should have it under supervision, than be left to themselves to hunt about for ice, not knowing the depth of water under it?

In this country, after three or four days' average frost, the ice rapidly gets safe for a number of skaters; at the end of a week it will be almost unbreakable. After a month's frost, there will always remain at its final break-up a week's safe skating. The surface is wet, but still hard enough for our purpose—indeed the friction appears less—and some delightful skating may be had at these times. We must remember that ice is a bad or slow conductor of heat, and therefore receives it back tardily, and thus remains bearable for some time. Unaware of this, many skaters imagine that the moment a thaw comes their practice is all over, the fact being that there is often good, nay the most delightful skating if a rapid thaw set in after a severe frost.

One of the writers has skated, in school-boy days, as early as the end of October, on a pond on Mitcham Common, Surrey, but then only for a few minutes. The 13th of March has been the opposite extreme in London. He has also skated on a Good Friday afternoon, and has seen skating in London continued every day of six consecutive weeks.

Ice may be kept in tolerably good order by artificial means, and a good many falls thus averted; sweeping, scraping, leveling, and flooding, are our great agents. Sticks and stones, grit and dirt, must be removed, the three latter being very injurious to the skates, and all of them excessively dangerous to the skaters. Such, too, hinder progress, for there can be none made whilst, either from weak or bad ice, or from the above obstructions, there is a perpetual fear and excitement at the anticipation of a ducking or a severe fall. The remedy for which is simply to go, if the ice is young, or decaying from a thaw, to very, very shallow water, and keep the ice in good order by removing *impedimenta*, and never indeed go to deep water under any circumstances until the ice formed on its surface is two inches thick, and even then it is advisible not to go alone. If skating be practised on private ponds, a long light ladder and ropes should be brought down to the banks, for with such simple means much may be done to rescue the drowning, by pushing the ladder over the hole.

If in actual danger of breaking through, it must be remembered that the best possible position is the horizontal one, flat on the ice, with the legs and arms extended, spider fashion, thus bearing and distributing the weight of the body over a larger surface.

With all these precautions skating, otherwise a rather dangerous pastime, may be divested of all extraneous matters that are the chief causes of its being so. The "jolly good tumbles," even, by the gradual progress of the learner, get fewer and fewer, until at last he is enabled, as far as depends upon himself, to travel safely over the ice at a high velocity.

A word as to the terrible accident on the ice in the Regent's Park, when forty persons unhappily perished. Does ice give warning of its dangerous state? Did it on the occasion of the above lamentable accident? We can say from our experience that it always does, if the ice is pure and unmixed with snow, and that it did on that occasion, as one of the writers was skating there two hours before the ice gave way, and left because he was convinced that the ice was unsafe. The signs are these: bending ice is not dangerous so long as any cracks in it are few and far between; cracks may be of great length, without rendering the ice dangerous; but it is when these main cracks, which are healthy, begin to be joined by other cracks, and these again are intersected and bisected, until the ice assumes the appearance of a lattice-work or network of cracks, that the disease is great, and the danger imminent; small pieces will push through, water will bubble up from holes, a wheezing, creaking sound, caused by the broken edges grating together, is heard, and this is the final token of its break-up, which it then does in a moment: but who can say without warning when there are all these signs (which we have never known to be absent in pure ice) to be observed? The snow ice is vastly more treacherous, notwithstanding its generally greater thickness. The movements of a crowd of people continually running up and down the ice is its severest trial, which must in the end disintegrate it unless it be very thick indeed. On ice that is skated on by many people, even in a hard continuing frost, a great many long dry cracks appear, some of them half-an-inch wide. No water comes up, but they are most dangerous to the figure-skater, for, if in going at a high velocity his skate get caught longitudinally in one of these, a severe fall is sure to ensue. These cracks should (after the final sweeping at night that all good ice should receive) be carefully filled up with water, hot water being much better than cold, as the heat melts the edges, and the water consolidates so as to entirely obliterate the crack.

With a kettle of hot water a man on skates can do an immense deal in an hour in the way of filling up cracks.

It is most important for the preservation of ice that the chips cut up by the skate should, if there is any thaw at all, be constantly swept off, as, if not swept off, the cut-up particles melt and sink into the ice, and thus cause it to become rotten.

One generally observes that the greatest care is taken to sweep the ice clean of the white powder that is cut up, and which, so long as the temperature is below freezing-point, does no harm; and that as soon as a thaw takes place, inasmuch as the powder is turned into water, the brooms are at once abandoned! The best sort of brooms for removing the particles which have been cut up and thawed, are those known as "Sqwegees;" they consist of a piece of board nailed at right angles to the handle, and on the board is placed a piece of thick india-rubber, which on being pushed along the surface of the wet ice removes the wet and slush very effectually.

With regard to flooding the surface of ice, it is possible, if one could ensure such a frost as would freeze one-and-a-half inches of water (which might have been put on the cut-up surface), that the new and old ices might adhere; but in this country the experiment would be dangerous, as in the event of the frost being insufficient to entirely freeze the surface water, the whole rink would for the purpose of skating be ruined. Again, it is a very difficult thing to put one-and-a-half inches of water on the *surface* of ice, as, if it be attempted while the thermometer is below freezing-point, the chances are that the surface-water freezes in ridges before the whole surface is covered—if, while the ice is thawing, great quantities of water are absorbed by the ice, or run off the surface by the sides. Another strong objection to flooding is this—ice that has been skated on a great deal not only has the surface cut up, but hills and valleys are formed, and if as large a body of water as one-and-a-half inches were turned on to the surface, the flooding would, in consequence of the irregularities and the law which causes water to find its own level, be a depth in some places of two or three inches, and in others of but half or a quarter of an inch.

We do not know what is the cause of these waves in ice that has been skated on, but fancy they may arise from the ice not being of the same density all over.

The best plan for renewing the surface of old ice is to have it most carefully swept (and for this purpose no brooms are so effective as the india-rubber "Sqwegees"), and then to water the surface by means of a watering-pot having a very fine rose, taking care to use *as little water as possible.* Cold water will be effective if the surface of the ice be at all greasy from a partial thaw, but if the operation be carried on while it is freezing, hot water should be used. At the "Cercle des Patineurs," in the Bois de Boulogne, they tried partially melting the surface by means of a steam-jet, but it was not a success; and they have now one or two large boilers, from which a supply of hot water may be obtained.

As a rule, in England, the sun in the middle of the day causes a partial thaw, and great care should be taken to remove the wet and slush before the sun goes down and freezing begins again, otherwise the surface will be very rough and unpleasant to skate upon.

CHAPTER IX.

FIRST STEPS.

LET us suppose that the learner, by means of the General Practical Directions, has thoroughly grounded himself in what manner he is going to act, and let us hope that he has often walked about a room with his skates on, and can readily adjust them, and that he has practised, too, with roller-skates, but that now he is going to make his first attempt on real ice. The first thing is to fasten on the skates, firmly yet comfortably, and to stand up carefully on the ice. Don't let him try, expect, or wish to do too much at first; let him be humble, for he is sure to be humbled. Let him keep himself as upright as he can; but he must lean a little forward for safety. Let the feet be turned out very slightly, indeed only just sufficient to give a hold on the ice. Now let him attempt to walk forwards at the slowest pace, and with the shortest possible steps, taking care when the foot is planted on the ice, and whilst the other is being lifted, to keep the ankle and knee stiff: he will thus prevent the ankle from twisting sideways, a common fault with the beginner. Again, great care should be taken to prevent the feet from getting apart sideways, which they will at first always have a tendency to do. After very few of these cautious steps, the beginner will find that he has a feeling which impels him to slide forwards on the flat of both his skates, after the manner of a slider: this should be encouraged by all means, until a standstill is come to, when a fresh start can be made. Now let the feet be turned out rather more, which will permit greater force to be used in the stroke or push, when doing the same kind of work. It must be observed that when the sliding *begins,* which will very likely be on the flat of the iron, the feet must be kept parallel, or they will spread apart. If this tendency cannot be prevented by ordinary correction, it can always be stopped by resuming the stepping, and taking up the sliding at a more favourable moment. An hour or two carefully spent in these preliminary lessons will enable the learner to commence the inside edge forwards on the edge of the skate. As the same directions serve for both feet, to avoid repetition we shall confine our description throughout this work as much as possible to one only, viz., the right.

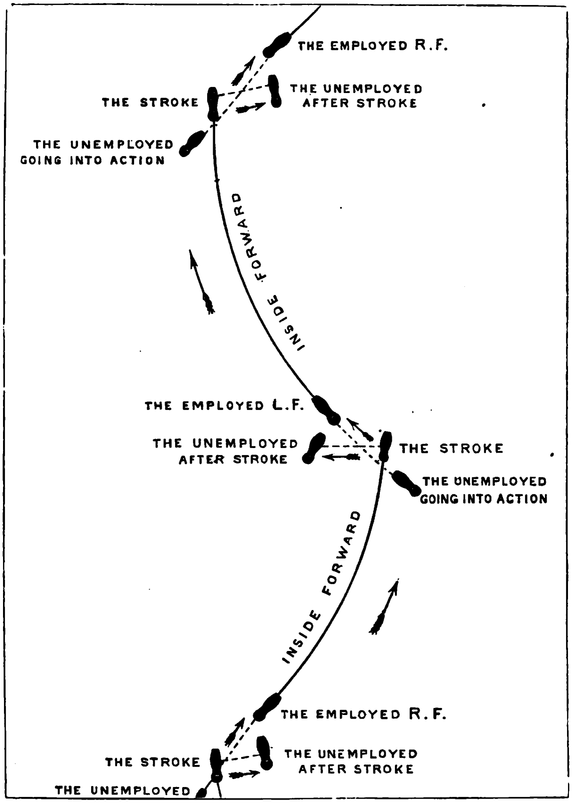
THE EMPLOYED R.F.
THE STROKE
THE UNEMPLOYED AFTER STROKE
THE UNEMPLOYED GOING INTO ACTION
INSIDE FORWARD
THE EMPLOYED L.F.
THE UNEMPLOYED AFTER STROKE
THE STROKE
THE UNEMPLOYED GOING INTO ACTION
INSIDE FORWARD
THE EMPLOYED R.F.
THE STROKE
THE UNEMPLOYED AFTER STROKE
THE UNEMPLOYED

FIG. 29.—Plan of the Inside Edge forwards on the right and left feet. A moment before the stroke the unemployed begins to move into action. The foot that has given the stroke then becomes the unemployed. See the arrows and dotted lines.

THE INSIDE EDGE FORWARD.

The feet should be turned out at an angle of 45°, and that forward portion of the inside edge which is under the ball of the left foot pressed into the ice. This gives a start (as we have already seen) to be taken up by the right foot alone, with the sliding action, and on the inside edge of the skate, that being the edge upon which the skater will then naturally be. This foot being either straight before him or slightly turned out, he should endeavour to balance entirely on it for a short time and distance, and then bring forward the left (which up to this point should have been kept behind, *vide* Directions)

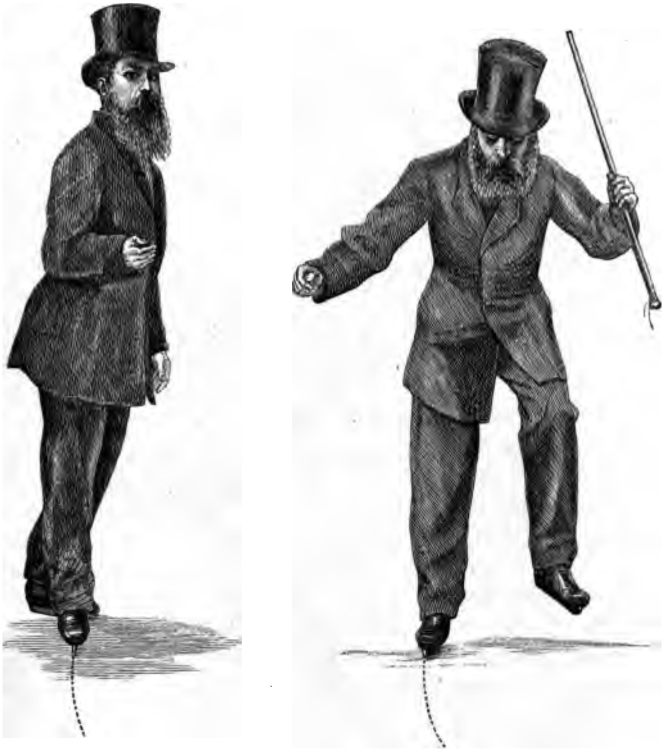

Plate I.—The Inside Edge Forward.

Correct Attitude. Incorrect Attitude.

and strike with the right, taking up the sliding motion with the left, and balancing on it in the same manner, and so on in alternate strokes.

As the skater gains confidence, his aim must be to travel as far as possible on one foot before setting down the other; if successful, first the quarter of a circle, and then the semicircle, will be described on the ice. When the balance is still more enduring, he will be enabled to make a very large spiral, like a watch-spring on a gigantic scale, which figure is a splendid lesson in balancing. Two complete circles, made on either foot alternately, will form the first of the series of numerous figure 8's which can be done in skating.

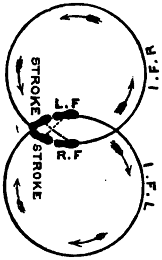

FIG. 30.

In order to gain the greatest amount of confidence, the beginner must practise, for speed, by vigorous strokes (applying the vertical and horizontal momentum) of one, two, three, and four yards' interval; and having attained great velocity, finish out with the largest possible spiral, which will gradually bring him to the centre and to a state of rest in a perfectly upright position. Of course, in doing this movement, one foot only should be used, the other should be kept off the ice from the commencement of the spiral to its conclusion. From the nature of the spiral on the large scale, it is a grand method of acquiring a true and steady balance (see Fig. 66), and we strongly advise the learner to work at it until he has completely mastered its difficulties, which are very much lessened by employing the sideways position (*vide* Directions) and by keeping the unemployed leg behind. These two attitudes correct the great tendency (which is almost unavoidable in the old and ugly attitude) to curl round too soon.

As we have begun to go pretty fast, we must notice by way of precaution,

HOW TO STOP.

We see no objection to beginners even having skates with rounded heels. With reference to these it used to be said, "Oh, you can't stop yourself; if you see a hole in the ice, you can't stop." The best answer to this is the general introduction of them, and the fact that, by placing one foot before the other at right angles, the skater can stop as easily as by the old plan.

If a man has been accustomed to skate with square-heeled skates, and changes them for round, he must be careful, or, forgetting his round heels, he will be elevating his toes to stop himself; and the result will be that he will find himself "on the broad of his back."

When the old-fashioned square-heeled skates are in use, stopping (which, it must be remembered, can only be done when going forwards) is effected, as we have said, by lifting up the front of both skates, and consequently digging the sharp square heels into the ice, and sending forth a shower of spray, accompanied with a loud disagreeable grating noise. This clumsy and ugly old method does not always answer, for frequently the performer overdoes it, and finds his feet flying up and his head down, and he finally alights in a well-known attitude; at the same moment he learns, from the pitiless laughter of the bystanders, that he has cut out that too well-known and painfully remembered figure, the star.

One of the writers was, some years ago, skating with a gentleman who had had his skates altered from square to round heels, and was charmed with the change. The piece of ice was large, and he descried in the distance the fair form of his intended, accompanied by several friends, whereupon, in his most graceful style, he skated as fast as he could towards them. Getting close alongside, he put out his hand for the loving grasp, and, forgetting his newly rounded heels, simultaneously elevated his toes, expecting to bring himself to a graceful state of repose; instead of which he came down an "awful cropper," charging feet foremost in the most undignified way into the midst of the fair bevy, and scattering them in all directions. But, of course, if skating is learnt on rounded heels, the skater would not be tempted into the indiscretion of our unfortunate friend.

The figure-skater who uses skates rounded at both ends can stop himself short, even at considerable speed, by placing the unemployed foot boldly down in front of and at right angles to the line of progress, at the same time bending and leaning the body back from the direction in which he is advancing. He can also skid one skate, or even both, by turning them slightly in, or he can place one across and behind the other, and so let it drag. When he is a good figure-skater, he has a host of resources in the turns and serpentine lines by which his course can be deflected, reversed, or arrested, but he ought to make himself master of the method of stopping by putting the foot across the line of progress, because he can thus instantly avoid a hole in the ice, or any unforeseen obstacle, which may be suddenly presented to his onward progress.

We now come to

THE TURN ON BOTH FEET,

which is done almost on the flat of the iron. The acquisition of it will tend very much to increase the nerve of the learner, and will be of great assistance in enabling him to practise the backward movements, as it easily, quickly, and safely changes the direction from forwards to backwards, or backwards to forwards, at any obtainable velocity; and this before he has acquired the confidence, which long practice alone gives, to make such a change on one foot only.

After a few strokes, let the beginner slide forwards on both skates, then by a somewhat sudden half-turn, either to the right or left, reverse the skates and the position of the body, pressing at the same moment principally on the toes, in order to clear the heels, upon which he will afterwards mainly rest; he will then proceed on both feet backwards in a straight line from whence he started, until his impulse is exhausted. Then let him again start forwards in the same manner, and when he has mastered the turn, which he ought to do in a very short time, he can learn it from backwards to forwards; and, finally, combine the two directions in one movement. Whilst carrying out this kind of practice, the body is necessarily full front.

FIRST STEP BACKWARDS.

Having acquired the facility of turning on both feet, the learner should, in order to continue the motion in a backward direction, turn the ankles slightly in and press on the inside edges of the skate, and leaning well forward, endeavour to push from such inside edge. The stroke will not be quite as it is in a forward direction, but will partake more of the nature of a curve made by one foot round the other. To acquire this at the beginning, let the feet be placed rather close together, the ankles turned in, and the weight of the body on the toes. In this position, if the learner attempt to "wriggle" the body

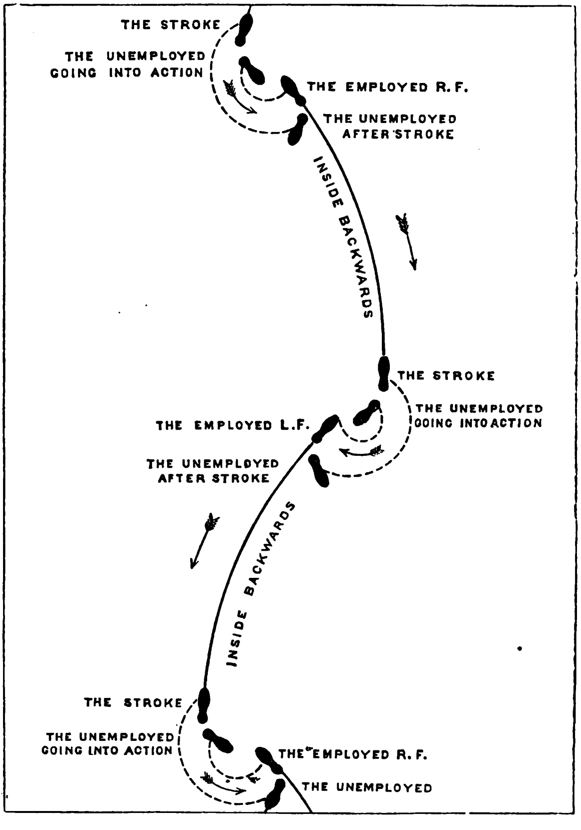
THE STROKE
THE UNEMPLOYED GOING INTO ACTION
THE EMPLOYED R. F.
THE UNEMPLOYED AFTER STROKE
INSIDE BACKWARDS
THE STROKE
THE UNEMPLOYED GOING INTO ACTION
THE EMPLOYED L.F.
THE UNEMPLOYED AFTER STROKE
INSIDE BACKWARDS
THE STROKE
THE UNEMPLOYED GOING INTO ACTION
THE EMPLOYED R. F.
THE UNEMPLOYED

FIG. 31.—Plan of the Inside Edge backwards on the right and left feet. A moment before the stroke the unemployed begins to move into action. The foot that has given the stroke then becomes the unemployed. See the arrows and dotted lines.

from one side to the other, a gentle progress in a backward direction will be made, and this germ of progress will soon, by practice, be formed into strong strokes.

THE INSIDE EDGE BACKWARDS.

This may be taken up from the turn on both feet by continuing backwards; then by turning the left slightly in, and pressing the ice with its inside edge, let the sliding be takèn up on the right alone in the sideways attitude, and let the skater continue on it in a large curve as long as he is able; this impulse exhausted, he should quickly bring his body up to full front, and pass it again to the sideways attitude applicable to the other foot; he should simultaneously with this change of attitude put down the left foot (which will thus become the employed one), and give a bold stroke or push from the inside of the right, which for this purpose must be slightly turned in (Fig. 31).

The sideways position will thus undergo a continual alternation, in accordance with the use of one or the other leg, and, from the complete change required, the skater must make the intervals of striking as long as he can; the skating will thus be large.

After a while he will be able to make two alternate circles, which form the second 8 on our list (Fig. 32). To ensure perfection of balance, it will be necessary to execute the large spiral; this can be accomplished by taking a sharp run forwards, then the turn on both feet to backwards, and half a dozen alternate back strokes to obtain velocity: this gained, the skater, poising himself in the sideways attitude, should continue in the largest spiral possible until he comes to a state of rest.

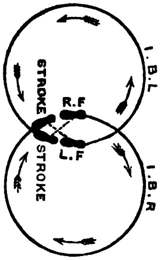

FIG. 32.

This is the new style of inside edge backwards, and was designed by us as a substitute for the old, which we cannot recommend, but which is done after this manner:—The stooping body is full front, the feet are turned in, the knees bent, and striking goes on as fast as possible. The skater is literally "backing," his face and body being turned from whence he came, and not, as it ought to be, in the direction in which he is going (and, indeed, while adopting this ugly attitude, it cannot be otherwise). He saws away, however, at a smart pace until, if the skaters are numerous, he is suddenly brought up with a concussion, which displays to his vision a shower of mimic fiery shooting stars, almost rivalling the real ones of the heavens in rapidity of movement and brilliancy of coruscation. To see two skaters, as one frequently does, "backing" *from opp*osite quarters, and brought together by some curious

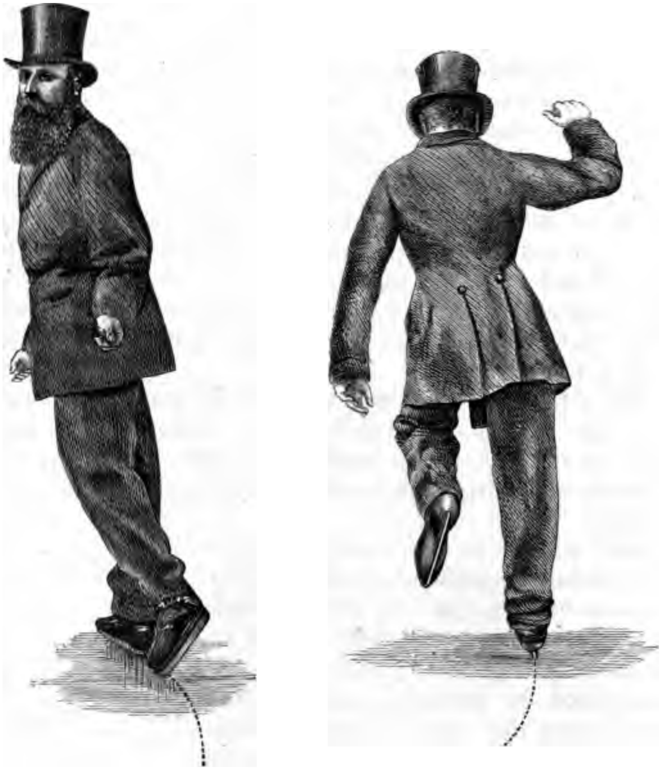

PLATE II.—THE INSIDE EDGE BACKWARDS.

Correct Attitude. Incorrect Attitude.

affinity that seems to affect young skaters, is certainly most ludicrous. We refer the reader to Plate II., which illustrates the difference between the correct and incorrect attitudes in skating inside backwards. For a further description of the old inside edge backwards, see below.

Few, indeed very few, learn the inside edge properly, either forwards or backwards; it is generally hurried and slurred over by those who think they will become good skaters more readily by practising the outside and excluding the inside edge.

By and by, however, when they advance in skill, and become aware that several parts of fine movements consist of the inside edges, they are unable to participate in them with the ease of others who have adopted a more systematic way of learning. It is of the last importance that the skater should ground himself thoroughly in the method of getting impulse by the changes of the feet and body on the inside, as well as afterwards on the outside edge, as this will enable him to develop all the resources of his art when keeping up long and difficult figures, instead of coming to an inglorious standstill in consequence of inability to make use of the despised inside edge. We are afraid the inside edge is only known to very many skaters as forming the concluding part of their figure 3, which we call 3 C. Surely we are not debarred from it because we can skate it *per se!*

We freely admit that there is greater beauty in the outside, yet we contend that the sideways attitude gives the inside a totally different aspect to that which it has when done "full front;" in fact, causing it to approach at once by a giant stride to the outside, and but slightly inferior to it as a "thing of beauty." It is the miserable attitude generally given to the inside that has brought it down so low in skating estimation, and rendered it thereby so little serviceable to figuring. The inside edge has generally been learnt with the body full front, the unemployed leg suspended out at the side, and ready to be used as a prop (which, in truth, it really appears to be), whilst both knees are bent, arms everywhere in the compass, and the thick stick (that is but too often carried) is frantically struck and stabbed about in all directions, rendering the performer, by his energetic efforts applied to mistaken purposes, almost an object of compassion. Who does not remember the capital description of sliding and skating in "Pickwick," when the impostor Winkle comes to grief by steering himself, against his will, into a reel which was in full swing? The uncertain skater, who knows not where he is going to, is rather a dangerous personage. If a man wants to skate backwards, he should at least learn to do so in a manner that will enable him to see where his skates are taking him.

Contrast then by an ideal picture the old inside with the new. In its new form the skater is without a stick, the knee of the employed leg is straight, the unemployed leg is kept behind, the heels are nearly together, &c.; the body is turned much away from full front, the head not so, however; as to the arms, one is slightly raised, the other hangs gracefully down behind, and slightly away from the body, but, the arms, legs, and body are, as it were, in a position sideways to the line of progress.

As this skater advances towards us, we immediately detect that the unsightly prop is gone, it has disappeared; he appears to lean over unprotectedly, which thus, at once, gives the inside the dress of the outside, by causing that appearance of danger from falling which is its characteristic.

CHAPTER X.

FIRST STEPS.—(*Continued.*)

THE OUTSIDE EDGE.

THE attention and ambition of the learner are always prematurely directed to this, by the remarks of his friends, who tell him, that when he can do it he can easily master everything else in skating. This may be true so long as he confines himself to the limited movements of former years: the simple figure 3, and the outside forwards or backwards. But it stands to reason, when he wants to combine both edges, and graft in and link with them several turns in movements of great difficulty, that unless he has learnt both edges thoroughly he will be, in the language of the Turf, "nowhere." And therefore, we say, it is unwise and premature to direct the attention of the skater to the outside before he has "passed" in inside. That is not so, however, with the learner who has followed us thus far, and become completely versed in inside. Then, indeed, he may turn with pleasure to learn the very beautiful movement, the name of which heads this chapter; the acquisition of which has called forth from a few writers on skating some of the most extraordinary and absurd directions. We can hardly imagine such a delusion as to put two or three pounds of shot in the skater's pocket to help him to the side he wants to go or lean to! Yet that is one of the methods recommended. But we will leave such nonsense, and turn at once to what we consider to be the most natural, easy, and proper method of learning it, which is this. Let the learner skate somewhat in the usual manner round the circumference of an enormous circle (we say "somewhat," because the outer leg will be on the inside edge, and the inner leg either on the flat of the iron or on the outside edge), so large a circle, then, that he can but just feel the outside of the one and the inside of the other skate. After having by this means obtained impetus, let both feet run *together in the par*allel curves of such a circle at intervals, and

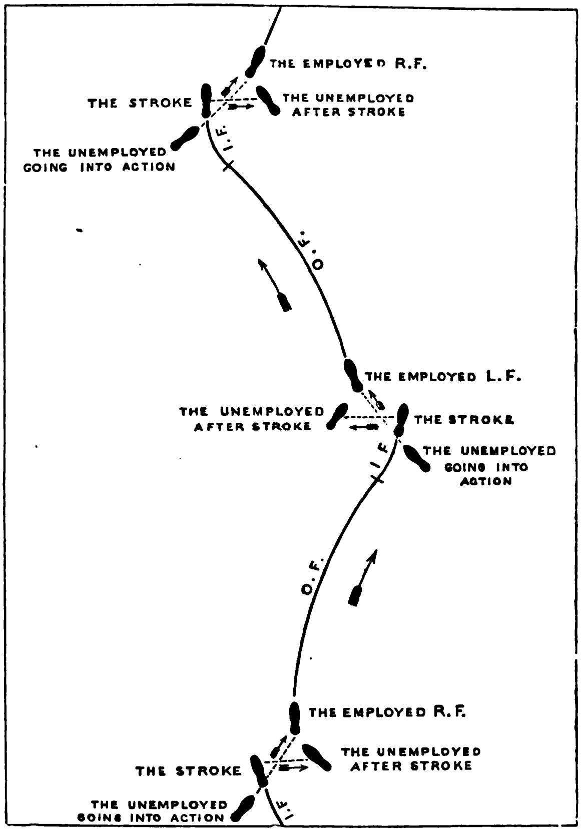
THE EMPLOYED R.F.
THE STROKE
THE UNEMPLOYED AFTER STROKE
THE UNEMPLOYED GOING INTO ACTION
I.F.
O.F.
THE EMPLOYED L.F.
THE UNEMPLOYED AFTER STROKE
THE STROKE
THE UNEMPLOYED GOING INTO ACTION
I.F.
O.F.
THE EMPLOYED R.F.
THE UNEMPLOYED AFTER STROKE
THE STROKE
THE UNEMPLOYED GOING INTO ACTION
I.F.

FIG. 33.—Plan of the Outside Edge forwards. The stroke is given on the inside, therefore the curves at their forward extremities become inside. A moment before the stroke, the unemployed begins to move into action. The foot that has given the stroke then becomes the unemployed, &c.

for some yards without striking. Now when he does this, as one skate must be on the inside and one on the outside, he has only to ease off the weight of the body more and more from the foot describing the inside, until he can entirely raise that skate from the ice at the moment he feels steady, and the problem is solved. When he can do this, he can strike from the inside with the unemployed foot, thus keeping up and increasing the impetus and centrifugal force. If he has sufficient nerve, let the unemployed foot be used entirely for pushing himself round and round. In bolder moments, in order to gain practical experience of the manner in which he is sustained, the beginner should occasionally turn his skate a little more in towards the centre he is working to, and he will find that the centrifugal force immediately increasing tends to place him in a moment upright, or, if we may use the expression, in a safer position, for a learner who has not acquired sufficient balance to dwell longer on the edge. A few of such occasional trials, and the beginner will have no fear of falling, because he possesses the antidote to it in this great and valuable power of correction.

The inclination of the body depends upon the size of the circle and the given velocity. What scope is there not for practice in the knowledge of this?

The direction of going must of course be altered for practice on the other skate.

Having acquired the edge thus far, the tyro must now resort to bolder measures, by striking direct to the outside in alternate large curves on either foot (Fig. 33), acquiring at the same time the sideways attitude, which up to this moment he has doubtless neglected, notwithstanding it may have been practicable at various times in the preliminary lessons; in this manner he must accustom himself to skate about the ice. He will afterwards easily describe two alternate circles, and thus form the third 8 on our list (Fig. 34). Finally he will practise for greater boldness by taking a run forwards, and when at great velocity

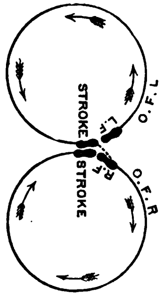

Fig. 34.

striking out, and so on to the outside for the gigantic spiral; when he can hold the edge on this spiral to a state of rest without ever touching the ice with the unemployed foot, the learner may consider he has mastered the outside edge; certainly not before. Hence the value of the spiral as a test figure.[1]

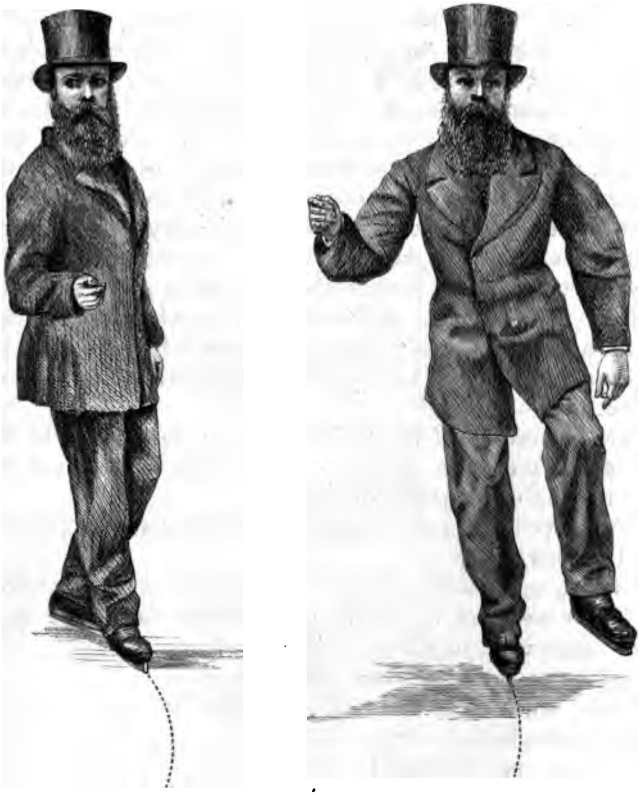

Plate III.—The Outside Edge Forwards.

Correct Attitude. Incorrect Attitude.

In alternating from one foot to another on the outside edge forwards or backwards, the striking is invariably done from the inside, which edge is gained by leaning over from the outside at the moment the change is made, from travelling on one foot to striking with the same foot (in order that the travelling may be continued on the other). Thus this is the earliest lesson in the use of the two edges on one skate, which will be fully entered into in Chapter XI. In the present instance its employment is so very transitory that it merely deserves this

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[1] Another excellent method of learning the outside edge forwards, should the skater require it, is given in the Chapter for the Ladies.

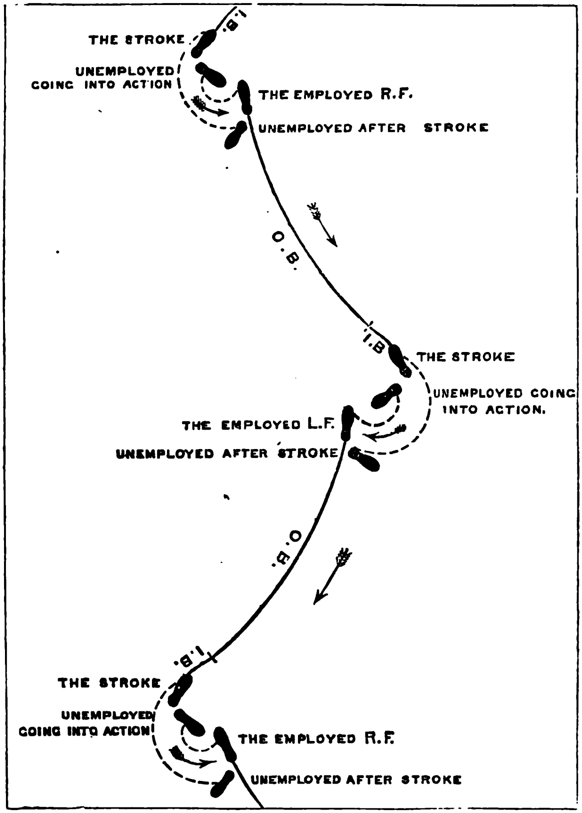

FIG. 35.—Plan of the Outside Edge backwards. The stroke is given on the inside, therefore the curves at their rear extremities become inside. A moment before the stroke the unemployed begins to move into action. The foot that has given the stroke then becomes the unemployed.

passing notice. Such a change of edge cannot, however, occur on that variation of outside known as the "cross outside," for in that (as we have described in the General Directions) the stroke is from the outside.

The Dutch and others skate to market on the outside, making very long curves, consequently getting very little on the edge.

In England it is also called, in the old books on skating, rolling, for which we suggest a reason, viz., its resemblance to the rolling of a hoop or coin or loose wheel, also the rolling of a ship in a sea. Again, a drunken man is said to go "rolling down the street," and this by reason of his swaying from side to side. It is the same idea, no doubt, that gives rise to the application of the word to the cross outside.

THE OUTSIDE EDGE BACKWARDS.

To learn this equally fine movement we shall adopt a plan similar to that recommended for learning the outside forwards, skating backwards, of course, instead of forwards, round the circle. Impetus to effect this may be obtained by forward inside strokes, the turn on both feet to backwards, and a few back strokes; then let the skater continue with both feet, running in the parallel curves of a very large circle, and let him practise the art of easing off the weight of the body from the foot that is on the larger curve (the outer) until he can gradually lift it from the ice; impetus must be sustained by occasional strokes of the same foot, or, if more convenient, a fresh start made. The sustaining power of the centrifugal force can be experienced by turning the foot that is describing the outside, a little more in to the centre, so as to make somewhat suddenly a smaller curve; this will immediately give the skater a practical proof of the certainty of such movement restoring the balance if in danger of being lost.

Having thus far acquired the edge, the alternate large curves should be struck in the sideways attitude (Fig. 35); next, the circles which make the fourth 8 (Fig. 36). The closing practice should be the swift run forwards, the turn on both feet to backwards, and the immense spiral to a state of rest without touching the ice with the unemployed foot; this *will test* the attainments of the learner in outside backwards, which on the large scale is a very fine and bold movement, and moreover a safe edge to be on at the highest velocity.[1] It must not be forgotten that the weight of the body should be on the toe-part of the skates, in forward edges, and on the heel, in back edges. Want of nerve in throwing the weight of the body well on to the heel is the cause of the great difficulty that is experienced in learning the back edges.

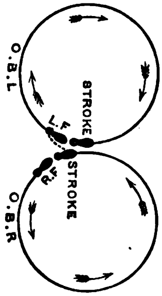

FIG. 36.

We now arrive at

THE CROSS OUTSIDE FORWARDS OR BACKWARDS.

The feet and legs in these movements are crossed in the act of striking. Therefore everything takes place on the outside edge, and to compensate for the unusual and somewhat disadvantageous position of the feet and the less vigorous impulse obtainable, it is necessary to pay great attention to the remarks in General Direction 9, so as to make the utmost use of the weight and momentum of the body. When this is done, the impulse is very considerably increased.

We have also to bring into more important action the hitherto unemployed leg, which must be gently and evenly swung round the employed one in such a manner that it arrives exactly at the proper time and angle to be put down, and so become the travelling one (Fig. 37).

Besides these matters, we must look to the proper alternation of the sideways attitude, which in this movement works in admirably.

When the skater has become somewhat proficient in these cross movements, he must begin to learn to disguise the act of striking as much as possible, so that they may be skated without apparent effort. Now to do this requires a particular degree of tact, which pages of writing cannot exactly explain. The power is there ; it lies in the angular position of the cross ; it wants developing by a certain amount of the most careful practice, particularly directed to the setting down of the striking foot so accurately at the angle of the circle to be described, that it shall want no after alteration, dropping, as it were, on to the proper edge at the proper curve. Unless this is done, the power of the stroke is lost in a moment. Another essential point to be remembered is the application of the weight of the body on to the stroke, and in the direction of the curve to be described. By such means the skater will acquire the art of sustaining, on good ice, the back 8's for an indefinite number of times, a feat which is well worth the practice required, it being the most difficult movement we have yet arrived at; it is

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[1] Another excellent method of learning the outside backwards is given in the Ladies' Chapter.

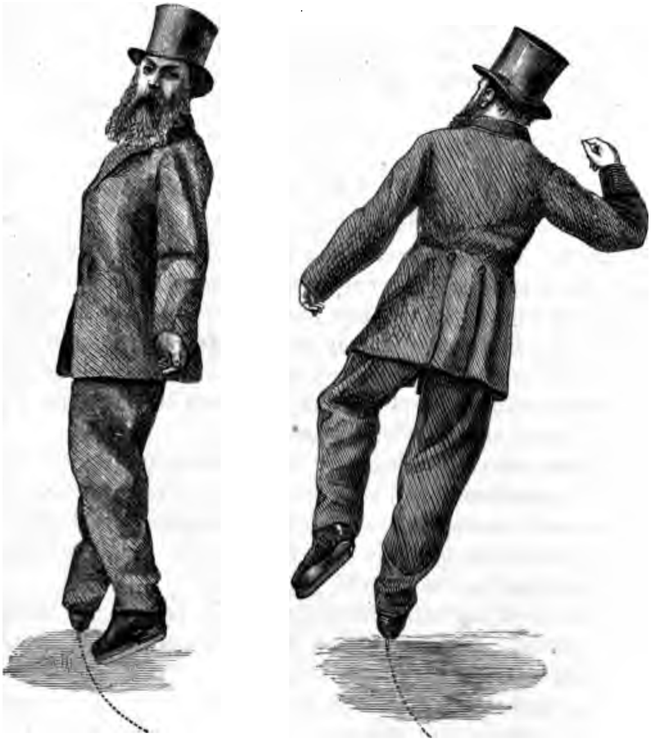

Plate IV.—The Outside Edge Backwards.

Correct Attitude. Incorrect Attitude.

a grand lesson in the art of preserving and maintaining impulse under a new and most difficult position—in short, another test figure. We therefore consider the cross movements a very fine study. They cannot be learnt in a short time; to be perfectly learnt, the skater must be prepared for an energetic and persevering practice of them, as, unless done with apparent ease to the skater, they are ungainly and worthless.

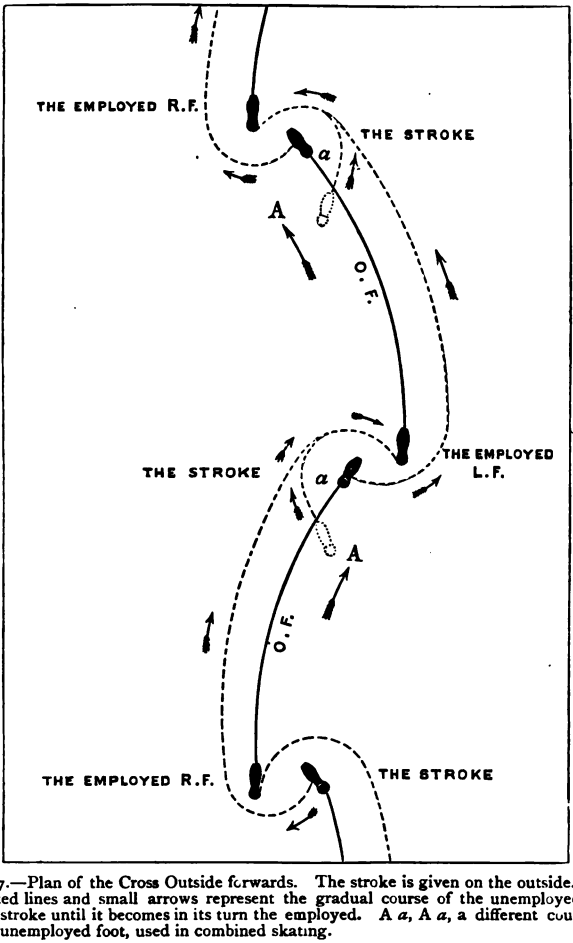

FIG. 37.—Plan of the Cross Outside forwards. The stroke is given on the outside. The dotted lines and small arrows represent the gradual course of the unemployed after the stroke until it becomes in its turn the employed. A *a*, A *a*, a different course for the unemployed foot, used in combined skating.

We now proceed to describe how to carry out

THE CROSS OUTSIDE FORWARDS.

Travelling slowly forwards on the ordinary outside of the left leg, let the skater swing the right gently round in front of and across the left, and, placing it down in the position applicable to the curve to be described (and to do this the foot must be turned in), strike from the outside of the left; the action necessary to form this stroke resembles the attempt to rise on the toe of the skate; now, travelling forwards on the outside of the right, let the left leg be swung gently round in front of and across the right, and placed down in its turn, and so on. The practice will naturally be small at first, but it must be the study of the skater to increase the size as soon as possible, and also to endeavour to make two complete circles alternately, and he will then have the fifth 8; and to make this 8 so that sufficient impetus be sustained to continue the movement, great dexterity must be attained (Fig. 38). The finish must be as large a spiral as practicable, which teaches the unemployed foot a new lesson in stopping behind crossed, until the state of rest, or the usual attitude belonging to the sideways position, is attained.

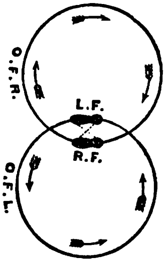

FIG. 38.

THE CROSS OUTSIDE BACKWARDS.

Travelling slowly on the ordinary outside backwards of the left leg, let the right be swung round gently at the back of and across the left, and placed down in that position, and the stroke made from the outside of the left; then, travelling on the outside backwards of the right, the left should be swung gently round at the back of and across the right, and placed down in its turn, and so on (Fig. 39). The tendency of the practice will be even smaller, at first, in this than in the forward cross; but, by sticking to it, it will gradually become possible to make the curves larger. The two alternate circles for the sixth 8 (Fig. 40), which the skater must learn to keep going, must then be tried; for these self-sustaining 8's, whether forwards or backwards, are, as we have already said, the test of a skater's power in that direction. In putting the foot down in these movements care should be taken, not only as to the turning out of the toe in the direction of the circle to be described, but the heel, and not the toe should in backward movements first come in contact with the ice. It has been known long ago that a particular arrangement of these curves

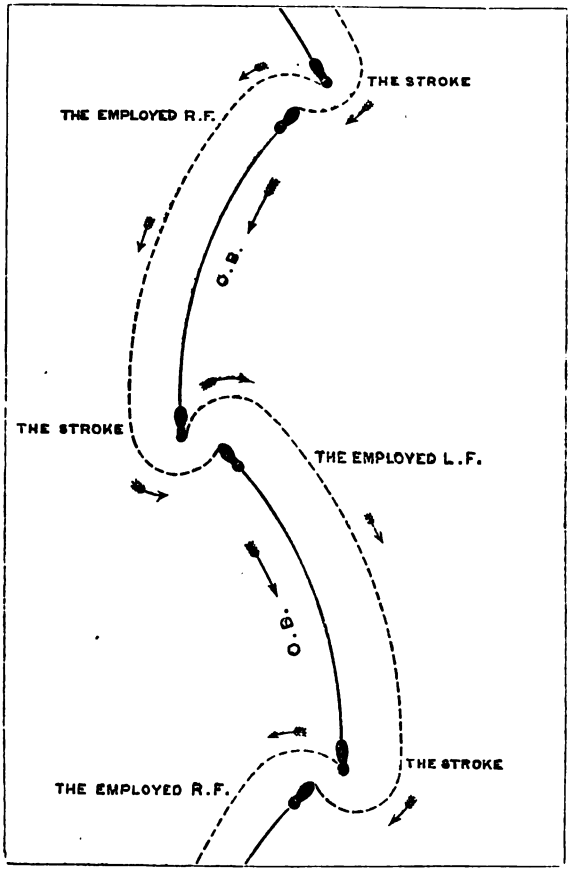

FIG. 39.—Of the Cross Outside backwards. The stroke is given on the outside. The dotted lines and small arrows represent the gradual course of the unemployed foot after the stroke, until it becomes in its turn the employed.

will design on the ice a figure closely resembling an ancient or Indian bow. Thus, we will say a curve of two yards on the outside of right, a small curve of one foot in length struck on the cross outside of left, and another, two yards on right, will show it.

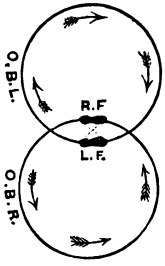

Fig. 40.

A very pretty combination of the outside forwards with the outside backwards, has lately come into vogue, and it can be skated by every one who is capable of turning out his toes sufficiently, so as to get into the "spread-eagle" position.

It is as follows; a curve or two of outside forwards is skated on alternate feet, and when it is desired to change to a backwards edge, the foot, say the right, on which the curve of outside forwards is being skated, is suddenly turned *out* as much as possible, and the left passed in rear of it, spread-eagle fashion, and placed on the ice on the back outside edge, and the same direction of curve continued on that edge as was begun on the right foot forwards. The change again to forward will be done in a similar manner by spread-eagling the feet at the end of a curve of outside back, and placing the unemployed foot down on a corresponding curve of outside forwards, and this change is rather easier than the other. The combination is a very pretty one, and renders the combination of edges forwards and backwards possible, without the stroke from the cross. The name given to this movement is that of "Mohawk."

The diagram (Fig 41), shows clearly the position of the feet at the moment of change.

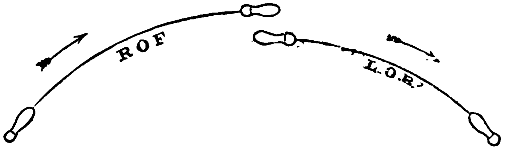

Fig. 41.

CHAPTER XI.

THE COMBINATION OF THE INSIDE AND OUTSIDE, OR VICE VERSÂ, FORWARDS OR BACKWARDS ON ONE FOOT, CALLED ALSO THE SERPENTINE LINE, AND THE FOUR TURNS.

THIS brings us to some very fine movements in figure-skating which, until the last twenty-five years, have been unaccountably neglected, and when practised at all, not half developed. To the majority of skaters their beauties are unknown. Perhaps we ought not to have said "unaccountably neglected," because the reason is plain, viz., the contempt and disuse of the inside edge, which participates in their composition in an equal degree with the outside.

Of the vast field of novel practice that arises from an accurate knowledge of the serpentine line, when combined with the single and double turns, we have treated in Chapters XI. and XII. At this stage of the learner's career, we require the knowledge of it to give us the power of controlling the skating, which naturally produces that great desideratum—steadiness of balance. This steadiness of balance is indispensable in the acquisition of that correctness which is required in the simple figures that follow, and still more so in the combined figures.

The study of the serpentine line will enable the learner to alter the size of any curve by making it either smaller or larger, or to convert it into a straight line, and again into the opposite curve to that with which he started, &c., proceeding all the time on one foot, and in an attitude fixed, save that the body tilts or leans over from side to side. Now, from the very nature of such a wonderful performance being possible, it contains the very essence of the art of balancing the body, in all the various gradations from inside to outside, or outside to inside, in large or small curves, circles, and even in unwinding, as it were, spirals, and thereby forming a loop, which latter will be afterwards separately described.

At the first glance at the subject we might almost be justified in assuming that, if a skater were equally proficient in inside and outside, he ought to be able readily to unite the two. Such a theory is found to be worth little, however, for it requires very great additional practice to master the combination of such movements on one leg, without help from the other. No amount of written instruction can avail, beyond informing the skater what is to be done and how to set about it, and reminding him of the following few facts closely connected with it.

First of all, velocity may be carried to such a pitch in skating, that, if we wanted to describe a small circle, we should not be able to lean over sufficiently to counteract the centrifugal force, from the simple fact that the skate-iron would no longer bite the ice, but slip. Not so, however, with the larger circle, which can be fitted to any velocity. Secondly, velocity and the size of the circle, or curved line, determine the inclination of the body. Thus, supposing velocity to continue nearly the same, and we wish to alter a small curve to a larger one, &c., we must incline less and less, as the size increases; we shall then reach the perpendicular, and be on the flat of the iron, from which the transition to the curve opposed to that we started with will be marked by a reversed series of changes, leaning over more and more and diminishing the size of the curve. The result of such a gradual blending will be the serpentine line. We can, of course, stop at any intermediate angle of inclination between the two possible extremes, and also repeat the changes several times,—that is, supposing we started with and keep up sufficient impetus to enable us to do so.

The practice must be, at first, at high velocity, in order that the curves may be very large and deviating but little from the straight line, decreasing, as progress is made, the velocity, and consequently the size, even to semicircles or still more acute curves, and yet keeping the skating large and bold; for when these qualities are absent at any time, or in any movements, the skating invariably assumes a hurried, fidgety, and fussy appearance, that looks as bad as may be.

The back movements can be taken up after a run forwards, turn on both feet to back, and a few alternating back strokes.

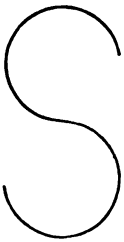

FIG. 42.

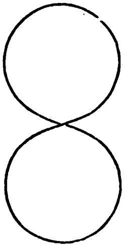

FIG. 43.

To represent an S (Fig. 42) or a snake is an easy matter. The test figure is the 8 (Fig. 43), done very much as we write it, and combining two full circles or curves of an opposite nature linked together. This kind of 8 can be done in two different ways, on each foot forwards, and in two on each foot backwards, that belonging to the outside of the latter being the tenth 8. The sideways attitude is found to work most harmoniously in uniting the two edges. Great attention must be paid to the unemployed leg, which must be kept behind in its proper place, until the moment, when it may be suddenly brought forward (assuming the direction to be a forward one), for the instant during which the change of edge is effected, after which it again takes its place in the rear. This action of the unemployed leg is most useful, and in doing a succession of continuous eights, absolutely necessary, though for a simple change of edge, as shown in Fig. 42, it may be dispensed with.

Until the last few years, it was always supposed that the velocity, whatever it might have been at the commencement of the serpentine, must always be gradually diminishing from the operation of friction of the ice, and the resistance of the air; but this is not so, as the change of edge itself can be utilized as a motive power. An adept, standing perfectly still on one leg on the flat of the skate, can start without any assistance from the other leg, by leaning over first to one edge, then suddenly altering the balance to the other edge, bringing forward the unemployed leg at the moment of change, and as suddenly throwing it back again.

The curves thus made are at first very small, and the impetus little, but "vires acquirit eundo:" the skater advances, and every change of edge gives a fresh impetus, the motion being similar to the sculling of a boat with one oar from the stern.

This new motive-power gives the skater, who can utilize it, great advantage in all the alternating movements hereafter described. By means of it, the 8 (Fig. 43) can be made self-sustaining, and we have done as many as twenty consecutively on one foot without aid from the other, except in the way of swing, and going as fast, or even faster, at the finish as at the commencement. This self-sustaining 8 can also be varied by a turn from outside forwards to inside backwards, and the change effected so that the continuous 8 is kept up backwards. After sustaining it some time, the turn can be made to inside forwards, and the change of edge effected, and so on; or Q's or half-doubles or doubles can be joined by the serpentine line, and so made into continuous 8's.

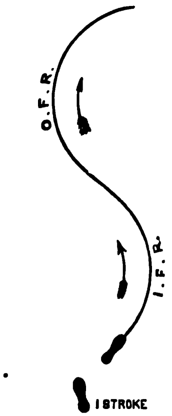

FIG. 44.—Serpentine A, on the Inside and Outside Forwards.

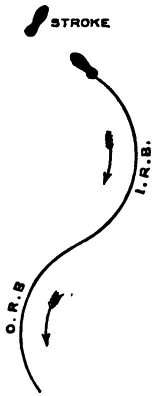

FIG. 45.—Serpentine B, on the Inside and Outside Backwards.

Most skaters find considerable difficulty in the continuous Q 8's in consequence of the turns having a tendency to place the skater too hard on the new edge. The most difficult changes are from the inside forwards to outside forwards, and from inside backwards to outside backwards.[1]

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[1] See directions for acquiring one foot eights on roller skates, p. 85.

DESCRIPTION OF THE FOUR SERPENTINE LINES.

Serpentine A (Fig. 44).—Let the skater commence on the inside curve forwards, then raise the body from such inclination, on the principles already described, until it passes the perpendicular, and leans again to the opposite or outside curve. This naturally gives the serpentine line, in which, having become perfect on both feet forwards, the skater must proceed to learn the others, thus:

B (Fig. 45).—We here commence on the inside curve backwards, change, and lean over to outside backwards.

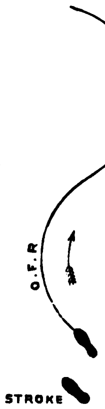

Fig. 46.—Serpentine C, on the Outside and Inside Forwards.

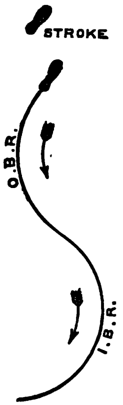

Fig. 47.—Serpentine D, on the Outside and Inside Backwards.

C (Fig. 46), again, is done by commencing on the outside forwards and leaning, after the change, over to inside forwards.

D (Fig. 47) is commenced on the outside backwards; and the change being made, the body is inclined over to inside backwards.

Then, to make a double change, A and C or C and A, and B and D or D and B, can be united. Then A and C, or C and A united, can be skated alternately on each leg.

B and D can be skated in the same manner.

A and C, or C and A united, can also be done in the same way, but the practice should be varied by using the cross impulse or by spread-eagling the feet where feasible.

B and D, or D and B united, can be skated after the same fashion.

These, with the figures already alluded to, complete this fine study, which we now leave to direct our attention to

THE FOUR TURNS.

Turn A from the inside forwards.
Turn B „ „ backwards.
Turn C from the outside forwards.
Turn D „ „ backwards.

These turns are a means of changing the direction of going from forwards to backwards, or from backwards to forwards, on one foot, without the assistance of the other.

The edge consequently is altered; thus:
Inside forwards will be changed into outside backwards;
Inside backwards into outside forwards;
Outside forwards into inside backwards;
Outside backwards into inside forwards.

Now comes an important point to understand, viz., that in these turns the inclination of the body sideways from the perpendicular is not changed (another proof of the unity of edges).

In the serpentine line we have had a complete change of the inclination, not so in these turns; it remains the same. Any of them will, with a little prolongation of the anterior and posterior portions of the curves upon which they act as a pivot for the skater, make a figure 3 of a trifle more than two semicircles; and if the reader places a pair of compasses in such a manner as to strike the curves from their respective centres, he will find the limb of the describer at the same inclination.

Thus are they contradistinguished from the serpentine line, in which we can only alter the edge by an alteration of the inclination. But in the turns under consideration we arrive at the same result by merely reversing the skating from backwards to forwards, or *vice versâ* (the direction being the same), and not by altering the inclination from the perpendicular sideways, save of course from any loss of velocity, or other cause.

Observing closely the mark or nick left by the skate-iron on the ice at the turn, we shall find it a remarkable counterpart of that in the middle of a 3; we can thus see that it turns upon a pivot, yet passes over the flat of the iron, the first edge being thus lost, and the new one taken up at an angle with the old of some 45°.

The first thing we have to do is to attend to the attitudes according to the edges in use, by blending the two at the moment of making the turn. The sideways attitude works well here, the advance of the shoulder and part of the body which is in rear being a great aid. We refer the reader to "General Directions" for remarks upon turns, momentum, &c. &c.

Turn A (Fig. 48) can be performed by describing any portion of a curve of inside forwards on the right foot, and the balance being on the toes, the body should be quickly turned partly round and back, to the skater's left; at the same time the skate should be partly reversed in accordance with the change the position of the body has undergone, until it catches the ice on the outside backwards, on which the skater may continue at pleasure, taking care to remember to throw the balance or weight of the body on the heel, as soon as the turn is completed. The same should be done on the left foot, turning the body and skate to the right. This turn is not difficult to execute when small circles are described, but it should be the study of the skater to make them as large as possible.

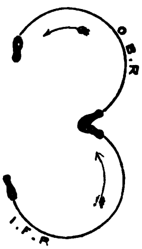

FIG. 48.—Turn A, on the Inside Forwards.

This is an excellent turn, because the skater can, by availing himself of it, place himself at considerable speed direct on to the outside backwards, even after obtaining impetus by a smart run forward. It has, however, a tendency to place the skater very hard on the back edge, and consequently in a comparatively small curve. This very tendency, like other features we have noticed in skating, points to the necessity of a strict attention, not only to the balance, but to the turning out of the toe of the unemployed foot in order to prevent the skates having the mastery over the skater. The great corrective is the above-described position of the unemployed leg, and the power of the serpentine line.

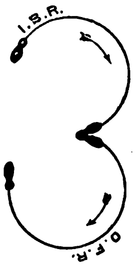

FIG. 49.—Turn B, on the Inside Backwards.

Turn B (Fig. 49) can be skated by describing any portion of a curve of inside backwards, the balance being on the heel; and when the change is to be made the body should be quickly turned partly round and forward, to the right, at the same time the skate should be partly reversed in the same manner as described in Turn A, until it takes the ice on the outside forwards.

Same for the left, turning the body and skate to the left.

To do this turn neatly and steadily, when going with the considerable velocity gained from a long run and a long sweep of inside backwards, is almost the greatest difficulty in the art. On a small scale, and at a slow pace, it is comparatively easy. Perhaps we ought to define what we mean by a small, as distinguished from a large scale. Curves of a yard will be small; after two yards the skating will begin to get large and the difficulties of this turn rapidly increase. At six yards we shall have a fine performance. When we can fairly lay claim to the title of a good skater, will the velocity required for equal curves of ten to twenty yards, or upwards, be too much for our steadiness? It ought not.

This particular turn is the one from which such very severe falls occur to learners, from the fault of not balancing on the heel when on the inside backwards, the difficulty of balancing on the heel being generally increased by the use of high heels to the boots. If the skate-iron be parallel with the foot as described at p. 48, the danger of falling in skating this difficult turn is very much lessened. If the balance is not thrown on the heel at the instant the turn is made, the front of the skate-iron is prevented from sweeping clear of the ice the few degrees which it ought to do without touching, until it rests on the outside forwards, whilst the body has probably been already turned: a check at such a moment is almost sure to prove fatal, and the result, a severe fall on the hip, certain;

whilst by turning on the heel end this danger is completely avoided. But it requires considerable nerve in a beginner to force himself into this, the really safe position, as he feels that if everything does not go right a fall will ensue, at a time when he, being turned partially sideways, cannot save himself with his hands. Skating this turn, when it can be done with confidence, is one of the most pleasurable sensations in figure-skating.

Turn C (Fig. 50) is skated by describing any portion of a curve of outside forwards, the balance being on the toe, and when the change is to be made the body should be quickly turned partly round forwards, to the right; at the same time the skate should be partly reversed, until it takes the ice on the inside backwards.

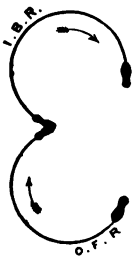

FIG. 50.—Turn C, on the Outside Forwards.

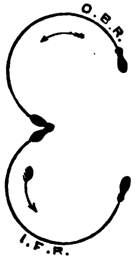

FIG. 51 —Turn D, on the Outside Backwards.

Same for the left, turning the body and skate to the left.

This turn is the figure 3 so well known to all skaters, some of whom, alas! never get beyond it; the outside forwards and this identical 3 being looked upon by them as the *summum bonum* of the art. One writer calls it a reservoir of power, and quaintly says that when a skater does not know what to do he turns this 3. We, too, can sing its praises. It is truly a handy turn, and well deserves all praise, and, although there are many other movements to be learnt in skating, we do not wonder at its being so popular. It claims our respect also from the probable fact, that from this turn (by reason of its being the easiest) the idea of skating the other turns has emanated.

Turn D (Fig. 51) is skated by describing any portion of a curve of outside backwards, the balance being on the heel; and at the moment of change, the body should be quickly turned partly round forwards, to the left, at the same time the skate should be partly reversed in the same manner, as above described, until it takes the ice on the inside forwards.

Same for the left, turning the skate and body to the right.

The usefulness of this turn, like others (except Turn C), is only known to the few really good skaters. Like everything else, it wants considerable practice before it is possible to do it neatly. Suppose a skater, placed by any previous movement at great velocity on the outside backwards, on which, continuing for a while, he wishes to get to the inside forwards for some purpose he has in view, this is the turn to use.

This turn has, like a previous one, a tendency to place the skater too hard on the inside edge in a comparatively small curve, the great antidote to which is the power of the serpentine line, the sideways attitude of the body and the turning the body from the hips upwards before the foot is reversed. By this turning of the body the rotation given to the skater is not nearly so great. The skater is also very apt to lean very forward, when placed on the inside forwards, which has also the tendency to make the circle small. Keeping the heels together is the remedy for this fault.

At this part of our practice we have become aware that the two turns, A and C, afford every facility for changing a forward run into a backward motion, whilst B and D change back movements into forward ones, all on one foot, thus enabling us to dispense with the turn on both feet for all except movements at the very highest possible velocity.

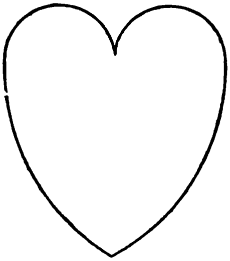

FIG. 52.—The turn or 3 in the form of a heart.

These four turns should be practised at first upon a small scale; then, by means of two semicircles, they can all be made to exactly resemble the figure 3 as usual, or in reverse.

By slightly altering the curve (the power of doing which we have gained by the knowedge of the serpentine line), we can actually mark out a tolerable representation of a heart (Fig. 52).

By making the turns or 3's as usual and in reverse (all on one foot), so that the curious marks or nicks stand close in and opposite each other, we shall be able to add four more 8's, making the number of this ubiquitous figure amount to fourteen (Fig. 53).

Should the skater find any unusual difficulty in making these turns, he is permitted, whilst learning, to swing the unemployed leg in the direction necessary to assist him; but we hold that no skater is perfect in turns who cannot dispense with such aid, and keep the unemployed leg behind in its usual attitude, save in all those instances in which the use of cross-striking necessitates an advantageous employment of it. But this absence of swing of the unemployed foot may be carried to so great an extent as to render the skating stiff and awkward—and this is to be avoided equally with the too great prominence given to the swinging leg.

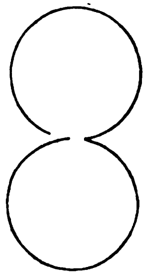

FIG. 53.—The turn or 3 in the form of an 8.

And now for a few words on the method of practising turns, for it is quite certain that Turn C, because it happens to come so readily, and is so easy to alternate, is the favoured one; the others being either unknown (a not unlikely matter), or difficult to get at readily, are, as a rule, discarded by skaters. We wish to put the reader in the way of learning them all, as distinct separate turns, executed without any twist or curl on, and he will thus gain an amount of steadiness and accuracy which will surprise him, and enable him to turn when he likes, and not when the skates like, as is too often the case. If we think, as we undoubtedly do, that the outside edge is a great step towards figure-skating, and that the serpentine line is another great link, by its power as a corrective, we also conceive that these four turns, by uniting the forwards and backwards or backwards and forwards movements, complete necessarily a certain fundamental part of skating. He then who can pass this Rubicon will be prepared to conquer all after difficulties to which we shall direct his attention.

Turns that are not easy to alternate *per se* can be made so by coupling them with those that are more handy. Thus, suppose the skater start with a stroke from the left foot, and thence make Turn A on the right (which would bring him on the outside back), by crossing the legs behind, and by making a stroke from the cross outside of right, and putting down the left on the outside back, he would be enabled, when on that edge, to do Turn D, which being done, will bring him on to the inside forwards, from which Turn A can be taken on the right foot again. Turn C will also work D. Turn B can be taken up after a Turn C: thus being left by it on the inside back of the left foot, the right can be put down on the inside back, on which Turn B can be skated; and being left by it on the outside forwards of right, the legs can be crossed or spread-eagled, the stroke effected, and Turn C skated on the left from the cross or the spread-eagle, taking up B as before. Besides this method of alternating turns, and keeping them as it were self-sustaining and continuous, it will be necessary to learn how to make them at speed after a long sweep of the edge on which the turn is required to be skated, dwelling on the new edge for a long curve also, until the impetus is exhausted, or nearly so.

The foregoing practice may fairly be said to be the groundwork of the art of skating. The perfection to which these rudimentary movements can be extended will be exemplified when they are used in the "Club figures" as combined movements.

TWO TURNS, OR THE HALF-DOUBLE (Figs. 54, 55, 56, 57, 58).

This is the first of these combinations. The old name of half-double gives perhaps a false idea of its nature; it is not the half of the well-known double 3, and it must not be confounded with it. When applied to the cross movements, it forms an alternating combination exceedingly curious and graceful, and by many preferred to the double 3 proper.

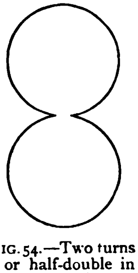

FIG. 54.—Two turns or half-double in the form of an 8.

Two Turns A.—One turn from the inside forwards, which places the skater on the outside backwards, from which another turn is made, restoring him again to the inside forwards.

Two Turns B.—One from the inside backwards, which places the skater on the outside forwards, from which another turn is made, restoring him again to the inside backwards.

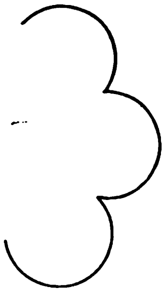

FIG. 55.

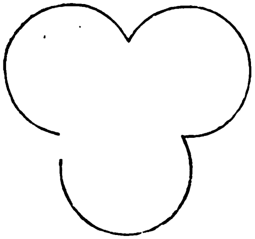

FIG. 56.

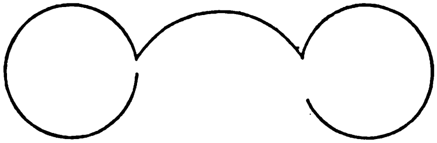

FIG. 57.

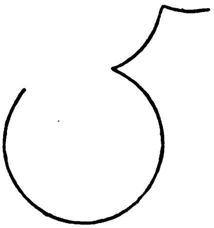

FIG. 58.

FIG. 55.—Two turns, or half-double. FIGS. 56, 57, 58.—A few forms it may exhibit,

Two Turns C.—One from the outside forwards, which places him on the inside backwards, from which another turn is made, restoring him again to the outside forwards.

Two Turns D.—One from the outside backwards, which places him on the inside forwards, from which another turn is made, restoring him again to the outside backwards.

Observe, first, that by any of these two turns the skater is brought back to the original starting edge.

Secondly, that any odd number of turns changes the direction of going from forwards to backwards, or backwards to forwards.

Thirdly, that by any even number of turns, the original direction of going is preserved.

Fourthly, that plural turns are but the coupling of the respective single turns that apply to each other.

The skater must be particularly careful to learn the art of being steady, by making the curves between the turns large and equidistant, and dwelling very long on the edge after making the last turn. It is a common and bad fault with skaters to make an involuntary turn, from having indulged in the bad practice of starting off with a spin, the consequence of which is, that the curves between the turns are dwarfed and unequal; one curve will perhaps be only a few inches, and the other two yards.

The facilities which arise in skating for using the cross impulse and spread-eagle at once become apparent. The skater can combine it with such outside turns forwards and backwards as are suitable, and can easily ramble about the ice with an alternating action, without any fresh start but what naturally belongs to such turns when continued and sustained from the cross impulse, or from the spread-eagle. They make a really excellent and effective performance for the single skater, and one which every onlooker admires for its graceful singularity.

To take a smart run and do two turns C, continuing on the outside edge steadily for a long and large curve, is another severe test of good skating.

We think that the fact of being able to imitate a figure 5 (Fig. 58) has never been observed. Two turns arranged properly will readily make it visible, and it partakes of the appearance of a figure called Cupid's Bow, hereafter to be described.

The next combination is

THE DOUBLE THREE, OR THREE TURNS (Figs. 59, 60, 61, 62).

This is effected by adding one more turn to the last figure. The double being composed of three turns (an odd number), reverses the direction of the movement. If it be begun on a forward, it is consequently finished on a backward edge.

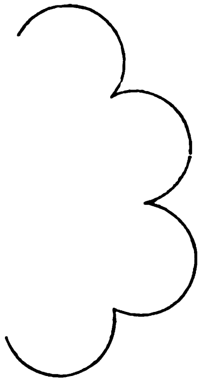

Fig 59.

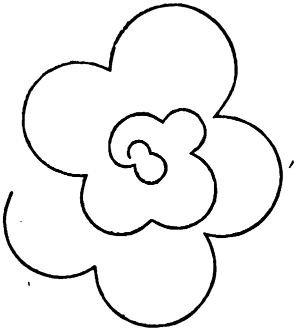

Fig 60.

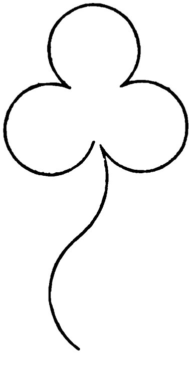

Fig. 61.

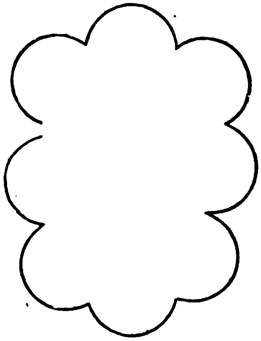

Fig. 62.

There are two ways of using the unemployed leg in this figure. The first and old method is by swinging it in a peculiar manner forwards or backwards, according to the direction of the turn that is being made; and then when the change is completed, gathering in the swing again. (It is vain to attempt to describe further an action which varies so in individuals.) It has a bold and fine effect when neatly done.

The other way is with the leg behind as usual, which method is more difficult, and to our views by far superior to the other, except, perhaps, in such a case as we shall presently describe. However, this is entirely a matter of taste.

To skate the double 3 to perfection, an immense amount of hard practice is necessary; it will not yield to a bungler. To make a few hurried spins, the whole of which can be surrounded by a child's hoop perhaps, and fancy we are doing the double 3, is a great delusion, and, as a rule, the performer who so makes them can only do them at a happy moment, and as often fails in his attempts as not.

The turns must come without apparent effort, and the curves or semicircles must be large and clean cut. The key to all this is undoubtedly a perfect study of separate single turns, without any curl or spin on to aid them, and the observance of great care in making forward turns on the toe and backward turns on the heel. The difficulties of the plural turns go on increasing with the size and velocity at which they may be attempted; at a high velocity, the centrifugal force being very great, they are only under the control of the best skaters. We have been induced to dwell much upon the art of making doubles, on account of their supposed difficulty and the poor success that attends many skaters who try to learn them.[1] They are not very difficult upon a small scale, but that they are so when very large is an undoubted fact, as the most expert skater will testify; and this arises from the necessity of attaining an upright position (for an instant) when the turn is made, and so losing during that instant the safety of the edge. Many skaters have but a faint idea of the scale on which this figure can, after a smart run, be skated. Curves of eight yards and upwards each, united by three turns, will be another great test-figure; and the greater the velocity, the greater the test.

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[1] That this figure may be executed with almost ridiculous ease and safety from long practice, I may state that I have often skated it from curiosity, with my eyes shut during its alternation, on each leg, without a fall, and I lay no claim to superior skill in it. The effect is curious; it may be expressed, perhaps, by the word "dreamy."—H. E. V.

The double 3 can be skated into the form of a flower or shamrock, by making three nearly full circles between each of the turns, the last curve continued larger and longer to represent the stalk. This stalk can also be represented with the serpentine line.

The four kinds of three turns or double 3's may be described thus:—

Three Turns A.—Let the start be effected with a curve of inside forwards, then a turn to outside backwards, another turn to inside forwards, and a final one to outside backwards, dwelling on each curve equally.

Three Turns B.—Let the start be effected with a curve of inside backwards, then a turn to outside forwards, another turn to inside backwards, and a final one to outside forwards, dwelling on each curve equally.

Three Turns C.—Let the start be effected with a curve of outside forwards, then a turn to inside backwards, another turn to outside forwards, and a final one to inside backwards, dwelling on each curve equally.

Three Turns D.—Let the start be effected with a curve of outside backwards, then a turn to inside forwards, another turn to outside backwards, and a final one to inside forwards.

FOUR TURNS AND UPWARDS.

Four turns, six turns, &c., being even numbers, bring the skater to the original starting edge; we have already mentioned the facilities of using the cross impulse and spread-eagle and alternating such turns.

Five turns will make a triple 3, seven turns a quadruple 3, called also a double-double.

As to the number of turns that can be skated, exceeding these, all will depend upon steadiness and preservation of the first impulse as much as possible, by the lightness of the execution, and the anti-friction qualities that can be made use of by a careful attention to the application of the vertical and horizontal momentum, as discussed in the "General Directions," and finally by the size of the curves or semicircles. We have seen over a score turns done on one foot consecutively; but as the impetus slackened the curves between the turns became very short, and the last few turns really amounted to no more than a spin. From the closest observation and experience, we believe that ten turns on each foot, the curves being of a large size, will almost exhaust the impetus, no matter what it may have been at starting; if more turns can be done, they will gradually degenerate into spins. No skater need fear for his reputation if he can execute a large triple or double-double, extending over a total space of twelve yards or upwards. It is in a wild yet graceful flourish of this kind that the unemployed leg is often swung to the front, gathered in, swung again, &c., according to the taste of the skater. The quieter and more elegant way, however, is we think to keep it behind all the time, particularly if this can be done without presenting an appearance of stiffness.

It becomes obvious that if we chose by way of private practice to do so, we can imitate more or less perfectly a few flowers, such as a rose, &c., by skating a number of turns into a spiral form. A pure kind of waltzing is also practicable by alternating such turns in a large circle. This is very different from the usual scramble, dignified with the name of waltz.

NOTE.—Notwithstanding all we have written on the subject of turns we regret to see so many men chronic "scrapers" on the second turn of the ordinary half double and double.

To eliminate this scrape, attention to the three following points is essential:—

1. There must be a proper rotation of the body put in force, and, therefore existing, when the turn is made.
2. The weight of the skater at the moment of change must be on the heel.
3. The body from the hips upwards must be turned to the direction of the rotation before the skate is reversed.

As some learners experience a difficulty in creating the necessary rotation, let them begin the movement from an impulse, or stroke, taken from the cross, and when the second turn is being made, bring the unemployed leg round and a little in front of the employed—with a motion similar to that which would be made use of if the skater desired to kick a stone off the ice with the side of his skate. The third point, if strictly attended to, will, of itself, cause the skater to revolve on the heel of the skate. If, in spite of attention to these directions the scrape still exists, let the skater bend or twist his skate in as though he were about to skate a loop: this will cause a momentary increase of centrifugal force, which will, in combination with the other points, pass him round from one edge to the other on a clean turn.

CHAPTER XII.

LOOPS, CROSSCUTS, AND Q'S.

BEFORE attempting to explain to our readers the nature of loops and crosscuts and the practical way of skating these figures on ice, we wish to lay before them the diagrams and definition of the three varieties of the cycloid and trochoid curves.

If a circle E P F roll along a straight line A B (Fig. 63,) so that every point of the circumference may touch the line in succession, and if P be that point of the circumference which was in contact with the straight line at the beginning of the motion, when the circle has made a complete revolution the point P will have described a curved line A P D B, which is called a cycloid or trochoid.

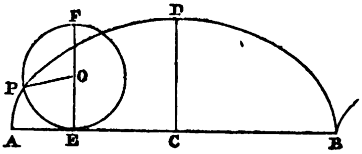

FIG. 63.

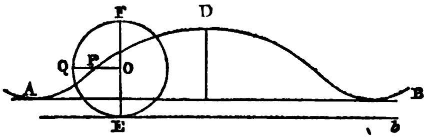

FIG. 64.

Again, if a circle roll along a straight line E *b* (Figs. 64 and 65), and Q be that point of its circumference which was in contact with the straight line at the beginning of the motion, and P be a given point in O Q, the radius of the circle (Fig. 64), or in the radius produced (Fig. 65), when the circle has completed a revolution the point P will have described a curved line at P D B which is called a prolate or inflected cycloid or trochoid if the point be within the circle (Fig. 64), and is called a curtate cycloid or trochoid if the point is without the circle.

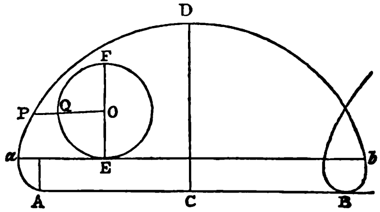

FIG. 65.

The curves or figures used by the skater may be grouped under two heads, the simple and the compound, of the cycloid and epicycloid families; and from close observation of the effect they respectively have upon him, we consider that they mark two distinct styles of skating, and for the following reasons.

Upon the Simple Figures, which are parts of circles, by far the best style and attitude are attainable, and the skating of the expert becomes large, bold, flowing and graceful, because the body can be kept erect and quiescent.

Upon the Compound Figures (of which the ordinary loop is an example, and which is known as the curtate cycloid), the additional rotary motion necessarily given to the body, and the peculiar position often demanded of it, sadly detract from the style; and the movements of the skater are, to a certain extent, ungraceful, because he will often (especially if he be a tall man) have to lower his centre of gravity by bending his knees and stooping; the unemployed leg, too, so useful as a means of imparting rotation, will naturally desire to fly out even to the horizontal position on account of the centrifugal force.

Numberless aërial illustrations of the wonderful curves, cycloid, epicycloid, &c., &c., may easily be obtained by suspending a bullet from a string held in the hand, and then making it into a rotating pendulum, at the same time moving the point of suspension in any required direction.

The cycloid may vary in form according to the nature of the line or base along which the generating circle or skater revolves, and also as to the position of the point tracing that circle, whether it is on, within, or beyond its circumference, and assuming the base line to be straight in the first instance, it will produce a common cycloid (which if continued two revolutions answers to the curve of Carré, which is part of the cardioid of Castilliani, known to skaters as the common 3); in the second case a prolate or inflected cycloid; and in the third, a curtate cycloid (the ordinary loop). When the base line is curved we pass to the epicycloid curves, which have interior or exterior *cusps*, and the epitrochoid, which have interior or exterior *loops*. Loops on the ice may thus vary in form, at one time flattened, balloon or pear-shaped, at another, the lines may come nearly to a point or cusp, at another actually cross, and in this instance when further carried out we have "the crosscut," to be hereafter described, a most remarkable figure. The wonderful properties of the cycloid or "curve of quickest descent" account for the skater appearing for a moment stationary, and then actually bounding forward again, and it is at this remarkable pause that, if he so desire, he can execute the "crosscut," which is performed by suddenly shifting the base line some eight, twelve, or more inches, backwards or forwards as the case may be.

When a skater is describing a cycloid curve in a given direction, say for instance forwards, if he suddenly alter his direction as mentioned above, this does not alter the rotation he started with, consequently that portion of the movement which is in reverse, may be a straight or curved line according to the *modus operandi*, and the speed at which the reverse is introduced.

We desire here to call attention to the prolate or inflected cycloid, which doubtless has much to do with curious curves which occur in some of our operations. It will be observed that as the describing point is within the circle as it rolls along its base, curves counter to one another, as in the serpentine line, are produced. Is it possible to skate a figure of this character? The execution by the skater of cycloid curves is extremely fascinating, but it appears almost a physical impossibility to perform them with elegance, for the reasons we have previously given; but, admitting that after due attention to its defects a few accomplished and powerful skaters may be able, by disguising the rotation of the body and by keeping the unemployed leg under control, to preserve some trace of the better attitude belonging to the simpler curves, still we feel it our duty to raise a warning voice to all, and particularly young learners of skating, who have not graduated in the simpler curves, to beware how they follow the gambols of the enchanting sirens of the ice, trochoid curves, which will otherwise most certainly beckon them, down "the curve of quickest descent," into the regions of bad style, from which there may be no escape.

The caution is more necessary, since the practice of the trochoid, in the form of the loop, is rapidly extending in England.

Having given the reader a general idea of the principles on which loops and crosscuts are formed, we now proceed to furnish practical instructions for executing them on ice.

In almost all the following movements, the inside edge, forwards and backwards, comes in for its equal proportion of work with the outside, and we again refer our readers to the remarks upon it, in the earlier part of this work; for, unless these have been properly learnt, it will be quite useless to attempt carrying out with any satisfaction the evolutions treated of in this chapter.

The amazing quantity of fresh practice that arises from the introduction of the inside edge, will astonish those who fancied that they had already mastered the art of skating. It is different, however, with those who have attempted to penetrate beyond the usual limit, and practically to unravel, as we have *tried to do, to* the extent of our abilities, everything that is possible to be done on skates. We cannot understand how any skater can conscientiously deem himself worthy to rank as an adept of his art, unless he can go very deeply indeed into the intricacies of steady balancing on one foot, introducing at the same time in a long movement various turns and changes of edge, by alteration of inclination which will require the greatest care in economising his original impulse. Great perseverance is necessary before some of these new combinations, which are excessively difficult, can be mastered.

The first figure we must direct the reader's attention to, is

THE LARGE LOOP.

This being done entirely on one edge throughout, requires some medium degree of speed. It consists of a portion of a large curve of the spiral, or it may contain (if the skater so please) one or two entire coils of it. The peculiarity of the spiral curve is well known as that of a curve whose radius is gradually and constantly diminishing (Fig. 66). Now, at the intended moment of making the desired loop, this diminishing radius must be arrested, and altered gradually and constantly into one that will extend the circumference of the curve, and bring the skater out of the influence of the spiral; by so doing his skate will thereby form a loop (Fig. 67).

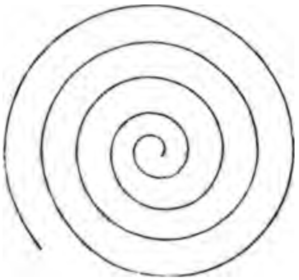

FIG. 66.

We have already, in the instructions for learning the serpentine line, dwelt upon the principles involved in enlarging or diminishing curves, and this particular figure is of a like nature. Let the reader watch the movements of a spinning-top; when nearly down he will find the peg describe on a very small scale this curious loop, and he will be able to apply the lesson to his own actions.

This figure is very fine practice, as long as it is kept large enough to enable us to preserve our usual neat attitude.

It can be done, of course, from all the four edges, A, B, C, D; and, if the impetus of the performer allows it, another large loop may be added, making a double figure, as Fig. 68.

The difficulty of learning loops is great, in consequence of the necessity of stopping and retarding the usual curve. In the same way as the head of a spinning-top, which is about to fall for want of spin, appears to precede the motion of the peg, so the body of the skater must appear to precede the skate, and the balance actually does so precede it.

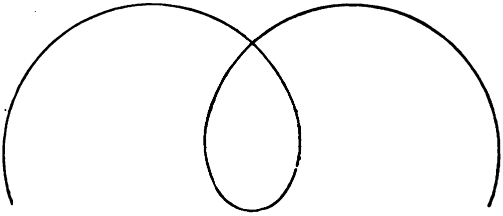

FIG. 67.

To practise loops, begin a curve of outside forwards, and when some two yards have been traversed, lean more on the edge, and bring the unemployed foot forward, at the same time getting the shoulder corresponding to the employed leg so far back in the direction in which the curve is being made, as to take the inclination of the body out of that straight line from the skate to the head which exists in a simple curve of outside edge. The centre of gravity being as it were in advance of the skate, the loop is formed by the skater in the same manner as a loop is formed by the peg of an expiring spinning-top.

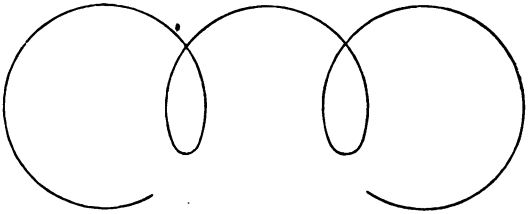

FIG. 68.

Having obtained the knack of doing loops with the assistance of the unemployed leg, it should be the study of the learner to dispense as much as possible with this aid and to do them by means of throwing back the shoulder corresponding to the employed leg. That it is very difficult if not impossible to skate loops without some aid from the swing of the unemployed leg, is evidenced by the difficulty of doing them from an inside edge, as in this case the unemployed foot being towards the centre of the circle to be described, the swing, to be obtained at all, must be had by thrusting the unemployed foot behind the employed leg in loops done from a forward inside edge, and in front of the employed leg in loops done from a back inside edge.

The learner, before he gets into the way of skating loops, will find that, although he may obtain the proper swing necessary to place the balance before the skate as above described, yet instead of making a clean cut on the edge of the skate, he will make a loop with a very broad scrape, as though in the act of making the cycloid curve the skate had slipped.

This is a proof that he is overdoing the advance balance, and practice alone will enable him to adapt the right balance to the curve to be described.

The study of loops has given rise to a very strange figure called a "crosscut," to be hereafter noticed.

As soon as loops from either edge can be skated with fair facility, the skater should endeavour to get on the edge as little as possible, and this will enable him to acquire a very difficult figure, viz. loops made continuous by means of the serpentine line (see Fig. 69). The loop on the outside forward should be skated on the forward portion of the skate, and on the inside forward on the back portion of the skate. The screwing round of the body should be the principal agent in making the loops, as this enables the unemployed foot to be used solely for assisting the change of edge. If the unemployed foot be

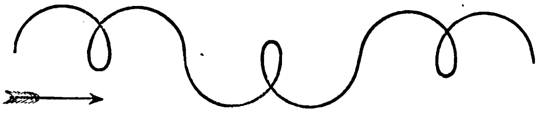

FIG. 69.

swung out as is usual in effecting a simple loop, it is in the wrong position for assisting the change of edge. Before, therefore, attempting this difficult figure, the skater should learn to skate loops without the aid of the unemployed leg and without getting hard on the edge, as the harder the skater is on the edge the more difficult does the change of edge become. The movement can be done either forwards or backwards, and either in a line or in the form of an eight.

Almost all beginners at loops must have noticed that in attempting them there is a frequent failure to get a perfect cycloid curve, and that the cause of failure is a small cut at the apex of the curve, as in Fig. 70. This is produced by the body not being in proper balance with the foot, so that the foot asserts itself and for the instant remains perfectly still, waiting for the body, or relieves itself by coming back straight in the direction in which it may be placed at the moment of stoppage; the body having in the meantime been swung round in the direction of the curve to be described, the skate naturally follows it, and the loop is made with the little straight cut at the apex.

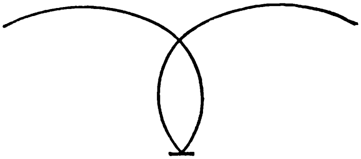

FIG. 70.

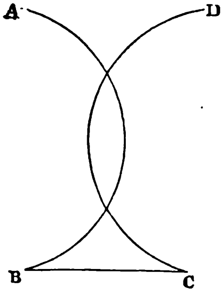

FIG. 71.

By encouraging this tendency of the skate to stop and come back in a straight line, the cut, at the base of the apex, may be made with certainty, and of considerable length, the whole movement being done on the outside edge. For instance; start on a curve of outside edge forwards, A B (Fig. 71), and when arrived at B, which point represents the natural pause belonging to this particular curve, the unemployed leg (being in advance of the employed foot as though a loop were to be made) is suddenly drawn back, which has the effect of bringing the employed leg back on the outside edge backwards, in the straight line B C; arrived at C, the unemployed leg is again brought forward, bringing the shoulder corresponding to it round at the same time. The effect of this is to throw the skater on to the outside edge forwards, on the curve C D, and the crosscut is made. In skating them from a back outside edge the foot of course in forming the straight line B C goes forward instead of back, and for this reason the straight line B C can be made much longer in back than in forward crosscuts. We have seen crosscuts from a back edge done with a base a foot and a-half long. The movement can also be repeated several times without aid from the unemployed leg other than swing, and it can be varied by putting in alternate crosscuts and loops, as in Fig. 72.

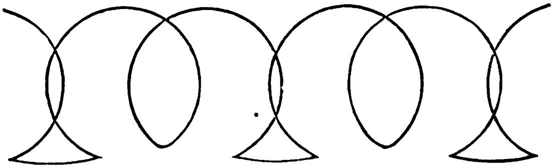

FIG. 72.

In doing a succession of crosscuts continuously it is difficult to get their bases in a straight line. The usual form is shown in Fig. 73.

There seems to be no limit to their repetition, as there is a complete, though instantaneous stoppage at the moment of commencing the base B C, impulse to continue the movement being imparted by the swing of the unemployed leg.

In the early stages of crosscuts, the skater will find that he frequently makes the base B C in a convex curve instead of in a straight line, or in a concave curve; and this convex curve gives rise to another strange variation produced by the advanced balance before spoken of, and which will be explained in speaking of the abortive form of the crosscut known as "Cupid's bow." As practice gives confidence, the base B C will be skated with a concave curve as in Fig 74, and this is the true form in which the crosscut should be skated, as the concave curve forming its base is a true curve of relative equilibrium.

In the year 1868 there appeared in the *Field* newspaper the diagram of a figure which the writer called "Cupid's bow" (Fig. 75).

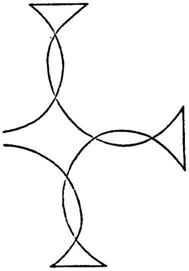

FIG. 73.

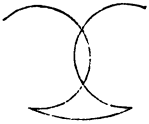

FIG. 74.

In the description of the figure, the writer said that all the curves were done on the *outside edge;* viz., the curve A B outside forwards, the curve B C outside back, and the curve C D outside forward. The crosscut being at that time unknown, a host of letters followed, deriding the idea of the curve B C being skated on the outside back, one gentleman stating that "the curve never had been, and never would be, skated on that edge," and giving for his reasons the following axioms.

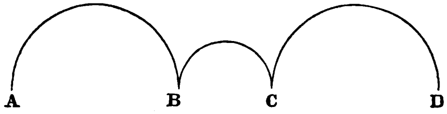

FIG. 75.

1st. "All circles, or parts of circles, performed by the skate, whether backwards or forwards on the inside edge, have their centres on the side of the spare foot."

2nd. "All circles, or parts of circles, whether backwards or forwards, similarly performed on the outside edge, have their centres on the side opposed to the spare foot."

Assuming these axioms to be correct, it is quite clear that the curve B C must necessarily be on the inside edge backwards, and it was assumed that the sender of the "Cupid's bow" diagram had made a mistake; but in a subsequent letter he adhered pertinaciously to his proposition, and there the matter for the time remained.

In learning the crosscut, one of the writers found himself frequently doing the impugned figure, exactly as it had been described, and wrote to the *Field* in vindication of "Cupid's bow." This, of course, brought up the non-believer, and the answer to his statement of disbelief was as follows:—"The axioms on which he grounded his disbelief had hitherto been accepted as correct, but the true form of the axiom should be as follows:—'No curve or any edge can be *permanently* held unless it is concave to the side on which the centre of gravity of the body is, as otherwise the body could not be in relative equilibrium.'" Hence an edge which does not put the body in relative equilibrium may be held on to for some little time. For example in Fig. 76. Let A B be described on the outside forwards, then at B the skater may turn to back on either of two ways: (1) by the common turn which brings him on the inside edge (the dotted line), for which, of course, he must let the weight of the body lie on the concave side of B G, and ease the heel so as to allow the skate to slide through the angle C B D. (2) If, however, he throw the weight of the body the other way, and keep the heel down with a firm bite of the ice, his curve of relative equilibrium will be the curve E F on the outside edge. Now the skate has to get into this concave curve, and the only

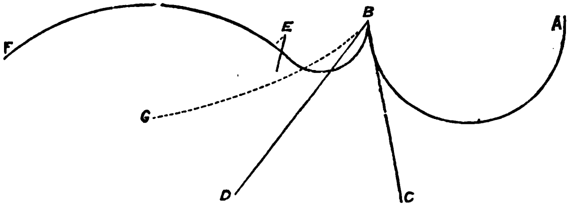

FIG. 76.

possible way is by describing a short convex curve from B to E; the position is no doubt forced, but by keeping the heel well down and leaning well back, the curve can be sustained for more than a yard, and with a very decided convexity. If before arriving at E, another turn to forwards be made, we have the impugned figure of "Cupid's bow," exactly as described by the writer in the *Field.*

As a curiosity in figure-skating, this "Cupid's bow" is interesting, but skaters of crosscuts look upon it simply as an abortive crosscut, as in their estimation the first curve of outside edge should be cut by the second curve of outside edge, after the base of the figure has been made.

It has been accepted as an axiom by all skaters, "that any figure which is capable of being skated from an outside edge can be equally well skated from an inside edge." Crosscuts from an inside edge are skateable, but they are very difficult, in consequence of the unemployed leg giving the skater the wrong balance for getting the drawback necessary to form the base of the figure. If the unemployed leg be thrust behind the employed one, the proper balance could be had, but at the expense of the freedom of action necessary in order to bring the leg forwards and backwards, for the formation of the base of the figure.

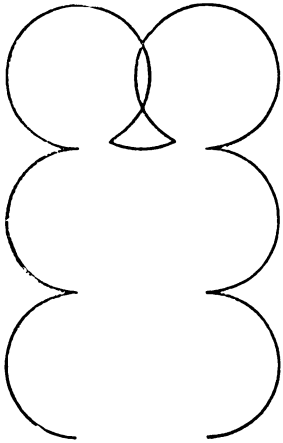
FIG. 77.

Fig. 77 is a representation of a half-double, crosscut and half-double; this is very difficult of performance, as the formation of the crosscut tends to place the skater very hard on the outside edge of the first curve, which commences the second half-double.

It follows necessarily from a consideration of loops that a still finer piece of practice will be attained, if the first impulse can be carefully economised, and an opposing curve (of the nature of the serpentine line, which we have already studied) introduced, keeping the figure at the same time large. (See Fig. 78 for the single figure, and Fig. 79 for the double turn and the loop. Figs. 80 and 81 are figures that will test the skater's powers.)[1]

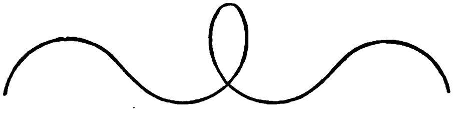

FIG. 78.—The Serpentine and the Loop.

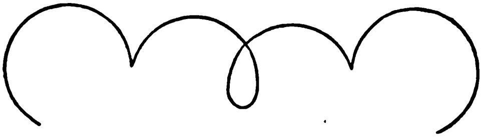

FIG. 79.—The Turn and the Loop.

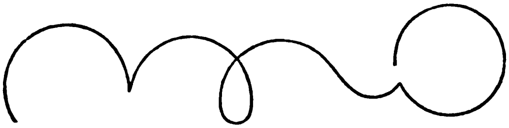

FIG. 80.—The Turn, the Loop, and the Q.

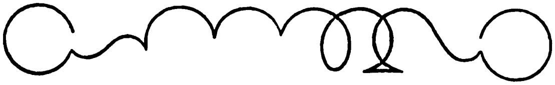

FIG. 81.—Double Q's, Double Turns, Crosscut and Loop.

Figs. 78, 79, and 80 will come with facility to skaters who can accomplish continuous loops as described at p. 177.

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[1] With regard to Fig. 81, it is more an ideal figure than anything else. It is certainly *possible* to skate it, but as it embraces almost every difficulty that exists in skating, it is hardly *probable* that many of our readers will succeed in accomplishing it.

The figure which next comes under our notice, and from which germ a prodigious amount of fine and difficult practice springs up, is that known as the Q figure, because the marks left by the skate (when properly directed, as may be easily seen by tracing the lines on paper) give a tolerable representation of the printed letter Q, and is thus a combination of a turn and a serpentine line. One of the writers first saw the Q figure skated by a working man on a pond at Blackheath, some thirty years ago, and was at once so struck with its merits, that he lost no time in setting to work to acquire it. Soon after he met a friend who had picked it up in a similar manner, at Norwich, and who was quite surprised that the writer should not only know it theoretically, but skate it practically. Some fifteen years after he saw it figured in Cyclos' first edition of the "Art of Skating," and from further inquiry he found that it was actually a very old figure, but one very little known to skaters about the time alluded to. It need not be said that the writer took, with others, an active part in its resuscitation and re-introduction, and it has deservedly become an established favourite with skaters of the modern school.

Strange to say, the knowledge of the particular Q abovementioned and no other was possessed for several years, until by his own practical researches into the art, one of the writers caused the introduction of seven others. Q D and reverse Q C may be picked out as samples of this new kind of difficult skating; by taking advantage of the different properties of an odd or even number of turns (when more than one turn is used), as well as by no longer preserving the exact form of the Q, and by still further dovetailing it into our old practice, the variety of changes is, to the uninitiated, almost incredible.

The Q figure is extremely simple; it is nothing more than an opposite curve, placed before or after a turn. The curve placed before the turn gives four varieties, as does also the curve placed after the turn. Simple as the addition is, it is no trifle in practice. Such a one as Q D, containing the most difficult of the turns, viz. B, will tax our very best powers.

Now it is absolutely necessary, in order to give a lucid explanation of these figures, to adopt a short and simple descriptive formula, which we do thus—

Q A.
Q B.
Q C.
Q D.
Reverse Q A.
Reverse Q B.
Reverse Q C.
Reverse Q D.

Each of which should be done entirely on either foot, without help from the other.

DESCRIPTION OF THE Q'S.

Q A (Fig. 82).—Let a curve of inside forwards be described, and, when some distance has been traversed, a change of edge is effected by leaning over to outside forwards, on which Turn C is made, and the resulting curve of inside backwards continued until the circle or body of the Q is complete.

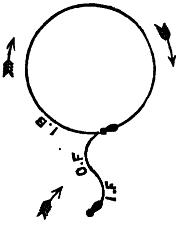


FIG. 82.—Q A.

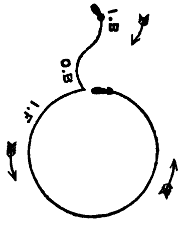
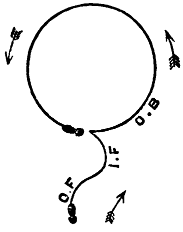


FIG. 83.—Q B.

(Both drawn for the Right Foot.)

Q B (Fig. 83) is begun with a curve of inside backwards, and, when some distance has been traversed, a change of edge is effected by leaning over to outside backwards, on which Turn D is made, and the resulting curve of inside forwards continued until the circle or body of the Q is complete.

Q C (Fig. 84) is begun with a curve of outside forwards, and, when some distance has been traversed, a change of edge is effected, by leaning over to inside forwards, on which Turn A is made, and the resulting curve of outside backwards continued until the circle or body of the Q is complete.



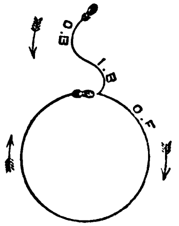
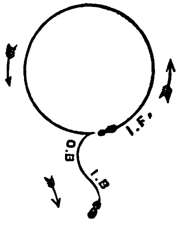


Fig. 84.—Q C. Fig. 85.—Q D.
(Both drawn for the Right Foot.)

Q D (Fig. 85) is begun with a curve of outside backwards, and, when some distance has been traversed, a change of edge is effected, by leaning over to inside backwards, on which Turn B is made, and the resulting curve of outside forwards continued until the circle or body of the Q is complete.



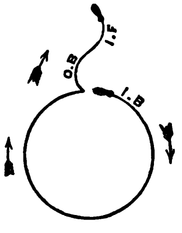


Fig. 86.—Reverse Q A. Fig. 87.—Reverse Q B.
(Both drawn for the Right Foot.)

Reverse Q A (Fig. 86) is begun by describing a whole circle of inside forwards (which represents the body of the Q), when Turn A is immediately made, and the resulting curve of outside backwards continued for a short distance; the change of edge is then effected by leaning over to inside backwards, which completes the figure.

Reverse Q B (Fig. 87) is begun by describing a whole circle of inside backwards, when Turn B is immediately made, and the resulting curve of outside forwards continued for a short distance; the change of edge is then effected by leaning over to inside forwards, which completes the figure.

Reverse Q C (Fig. 88) is begun by describing a whole circle of outside forwards, when Turn C is immediately made, and the resulting curve of inside backwards continued for a short distance. The change of edge is then effected by leaning over to outside backwards, which completes the figure.

Reverse Q D (Fig. 89) is begun by describing a whole circle of outside backwards, when Turn D is immediately made, and the resulting curve of inside forwards continued for a short distance. The change of edge is then effected by leaning over to outside forwards, which completes the figure.

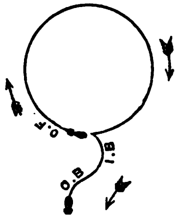


Fig. 88.—Reverse Q C.

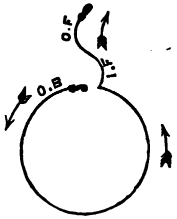


Fig. 89.—Reverse Q D.

(Both drawn for the Right Foot.)

If the reader has properly studied the serpentine line, he will find no difficulty in changing the edge: when adding on the turn, he may perhaps require, in his early efforts, the assistance of a gentle swing of the unemployed leg; but when he is more advanced, this friendly swing must be discarded in favour of a proper use of the change of position the body will undergo. This will, from careful practice, come naturally, although slowly.

On the termination of any of these eight Q figures, the skater remains on an edge alike in character to the one he started upon, but his direction of going is reversed. Thus, taking the Q A for an example of all, we find that he starts on the inside forwards, changes the edge by inclination of the body to the opposite side (outside forwards), on which, after making the Turn C, he is restored to the inside edge, but in a backward direction.

THE Q ALTERED IN FORM.

The skilful skater does not care for keeping to arbitrary imitations of particular figures, unless there is some real object or apparent advantage to be gained in so doing. The forms of particular figures are most useful in the way of giving the young skater something to practise at—something to achieve—which may tend to lead him on to still further improvement. Under this category may be classed the alteration of shape we now propose for the Q (Figs. 90 and 91). The alteration consists in simply leaving out three-quarters of the body of the Q, and making the changes of edge equidistant, *i.e.* the duration of the curves equal. We shall thus be prepared to join together, and otherwise vary, these eight Q's, forming them into double Q's thus:—

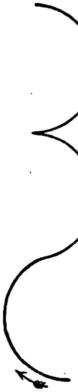


FIG. 90.—The Q, altered into equal curves.

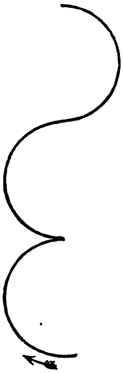


FIG. 91.—The reverse Q; altered into equal curves.

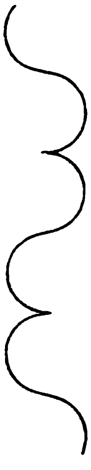


FIG. 92.—The Q's, doubled.

First double Q A will be formed by the junction of Q A and Q B.

Second double Q B will be formed by the junction of Q B and Q A.

Third double Q C will be formed by the junction of Q C and Q D.

Fourth double Q D will be formed by the junction of Q D and Q C.

Fifth double Q will be formed by the junction of reverse Q A and reverse Q B.

Sixth double Q will be formed by the junction of reverse Q B and reverse Q A.

Seventh double Q will be formed by the junction of reverse Q C and reverse Q D.

Eighth double Q will be formed by the junction of reverse Q D and reverse Q C.

In each of these, the skater is brought back to his original starting edge. Thus, taking the first double Q A for an example, we find that he starts on the inside forwards, effects the change of edge by inclination of the body to the opposite side (to the outside forwards), on which, after making the Turn C, he is deposited on the inside backwards; he now again effects the change of edge by inclination of the body to the opposite side,—*i.e.* to outside backwards,—on which, making the Turn D, he is restored to the inside forward, his original starting edge.

Alterations of edges by opposite inclination, and alterations of edges by turns with the same inclination of body, are the combined features of these beautiful figures.

Among the many novel marks left on the ice by the skater, as he practises these single Q's, we may notice the exact form of the "bracket" used in writing (Fig. 92), and we have found that we could skate the double Q's into a figure which, as being a good test of ability, is, perhaps, worthy of being preserved, and christened

THE SPECTACLES.

There are necessarily four ways of doing the figure, all founded on the same principles, viz. the two sorts of Q's united in their unaltered state. One example will suffice. Reverse Q A and Q C, which may be detailed thus, and begun by describing a whole circle of inside forwards, when Turn A is immediately made, and the resulting curve of outside back continued for a short distance; the change of edge is then effected by leaning over to inside backwards. Here the edge is again changed by leaning to outside backwards, on which Turn D is made, and the resulting curve of inside forwards continued until the circle is complete (Fig. 94). The result will be a tolerable representation of a pair of spectacles without the side springs; and this figure is useful as directing the attention of the skater to the combination of the two sorts of Q's, viz. those in which the body of the Q is made first, and those in which it is made last. By skating the spectacles the four different ways possible, viz. by starting from the reverse Q's, A B C and D respectively, the skater will absorb and interlink each time one of the others—Q A, B, C, and D, thus:—

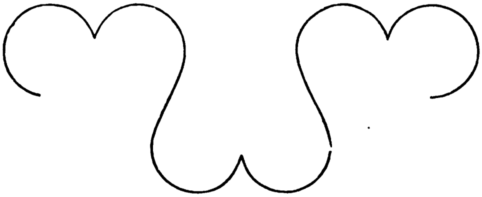


FIG. 93.—Extension of the Principal Forms—Arabesques.

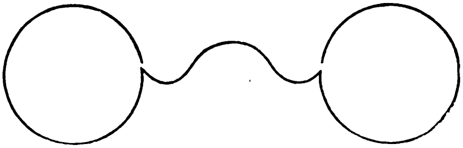


FIG. 94.—The Q and the Reverse Q form Spectacles.

Reverse Q A and Q B Reverse Q B and Q A Reverse Q C and Q D Reverse Q D and Q C	All form the spectacles.

Now, by reversing the order of these, as Q B and reverse Q A, for instance, we arrive at another beautiful variation of the Q's, viz. those with more turns than one.

From practice we have discovered a very simple rule to understand turns; it is this: *odd turns* change the direction of going, *even turns* do not. Yet, in addition to this, we must further simplify the descriptions of these ensuing figures, because it would certainly bewilder the learner had he to follow out all the many turn movements under separate heads, such as "two turns," "three turns," &c.: this then we do by dividing them into the two distinct classes—odd and even turns—and then our next list of changes will stand thus :—

Q A three turns Q B ,, Q C ,, Q D ,, Reverse Q A three turns Reverse Q B ,, Reverse Q C ,, Reverse Q D ,,	Representatives of the class "odd."

The combination is simple. The double 3 (being composed of three turns) gets worked up into the figure, and, like all odd turns, changes the direction of going. The character of the edge is preserved, however, by the alteration of the inclination. One descriptive example will suffice.

Reverse Q A three turns is begun by describing a whole circle of inside forwards, from which a turn to outside backwards is made, another to inside forwards, and the third again to outside backwards, on which the skater continues for a little distance, when he effects the change of edge by leaning over to inside backwards.

The companion list of changes is :—

Q A two turns. Q B ,, Q C ,, Q D ,, Reverse Q A two turns. Reverse Q B ,, Reverse Q C ,, Reverse Q D ,,	Representatives of the class "even."

The combination is also simple,—the half-double or two turns gets worked up into the figure, and, like all even turns, does not change the direction of going. The character of the edge is altered, however, by the alteration of the inclination. One example will suffice.

Q C two turns is begun by describing a curve of outside forwards, when the change of edge is effected by leaning over to inside forwards, on which one Turn A is made to outside backwards, which being continued for some little distance, the second turn to inside forwards finishes the figure.

We now arrive at a set of combinations beyond which it will not be necessary to go, as they may well be said to be exhaustive of this part of our subject. They are those in which, in a double Q, double or more turns are engrafted.

First double Q A, three turns in each (an example of the class "odd").
Second double Q B, three turns in each.
Third double Q C " "
Fourth double Q D " "
Fifth double reverse Q A, three turns in each.
Sixth double reverse Q B " "
Seventh double reverse Q C " "
Eighth double reverse Q D " "

In this remarkable and difficult figure, consisting of two kinds of double threes and two kinds of serpentine lines, the skater is restored once more to the edge he originally started upon. One example will suffice.

Second double Q B, three turns in each.—It is begun by describing a curve of inside back, when the change of edge is effected by leaning over to outside back, from which three turns are made, the last of which will leave the skater on the inside forwards. Here the change of edge must be again effected, by leaning over to outside forwards, from which three turns are made, the last of which will leave the skater on the edge he originally started upon, viz. the inside backwards.

The last list consists of:—

First double Q A, two turns in each (an example of the class "even").

Second double Q B, two turns in each.
Third double Q C „ „
Fourth double Q D „ „
Fifth double reverse Q A, two turns in each.
Sixth double reverse Q B „ „
Seventh double reverse Q C „ „
Eighth double reverse Q D „ „

In this equally difficult figure, the skater curiously enough is also brought back to the original starting edge, as may be seen from the one example necessary.

Fourth double Q D, two turns in each.—It is begun by describing a curve of outside backwards, when the change of edge is effected by leaning over to inside backwards, from which two turns are made, the last of which will leave the skater on the inside backwards. Here the change of edge must be again effected by leaning over to outside backwards, from which two turns are made, the last of which will leave the skater on the edge he originally started upon, viz., the outside backwards.

As we may expect, from our experience of the foregoing, it becomes practicable to describe on the ice double imitative figures. As these are useful when regarded as practice which tends to educate the feet, it is perhaps advisable to preserve them. We name the two sorts—

THE UNITED SHAMROCK AND THE UNITED ROSES.

(Figs. 95, 96, and 97.)

We shall only describe the first in detail, as the second is easily done by adding more turns.

There are four ways of skating them, founded on the reverse Q's A, B, C, and D three turns, joined to the Q's A, B, C, and D. We will take the example from the Q B three turns, and the reverse Q A three turns.

This is begun by describing a curve of outside forwards, turning to inside backwards, again turning to outside forwards, and then again to inside backwards (at which period the junction forms one shamrock). Continuing on the last-mentioned edge for a yard or two, a change of edge must be effected by leaning over to outside backwards, on which edge

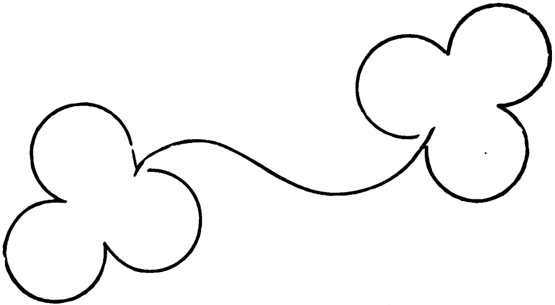


FIG. 95.—The Double Shamrock.

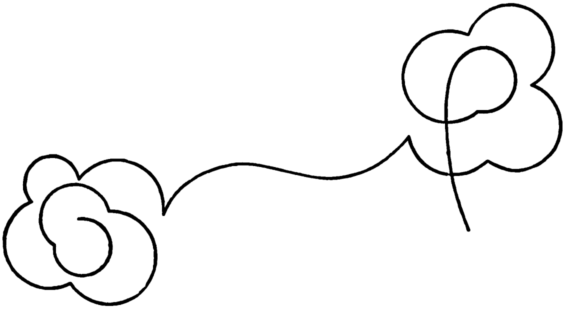


FIG. 96.—The Double Roses.

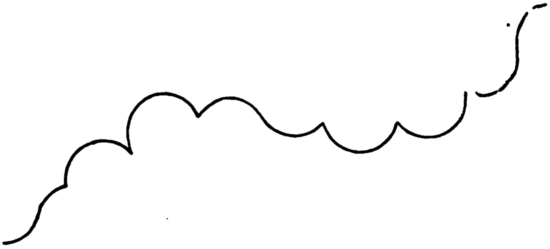


FIG. 97.—Serpentine Line and Several Turns. (All the figures being extensions of the Q principle.)

the skater continues for another yard or two (thus forming a serpentine curved stalk); a turn is then made to inside forwards, another turn to outside backwards, and another to *inside* forwards, the junction of which forms the last shamrock: the figure being, in fact, two double threes, each of a different sort, altered to the form of a shamrock, and united by a serpentine curved line, the whole being done on one foot, and affording no less than eight changes.

The United Roses contain more turns in the spiral form, commenced and finished at the centre; beyond this the principle of the figure is the same.

We shall now proceed to direct the reader's attention to a few little matters in connection with our last lessons that require explanation.

The question may arise, whether sufficient impetus can be maintained to alternate some of these kinds of Q's and make them self-sustaining. We can reply in the affirmative. It becomes quite possible on good ice, and with due attention to the impulse and momentum, as described in the "General Practical Directions," to alternate even double Q's; whilst from a very gentle start, six or more single Q's can be linked in series on one foot, without any fresh aid from the other. The size of Q's may be left to the capabilities of the skater, the aim being to skate them large, even if in doing so they should become fewer in number. The double Q may also be skated in the form of continuous eights.

Can we make use of the cross impulse? Certainly, and at times it is most useful and convenient to make these well-known respective cross movements, either forwards or backwards, available; and this causes additional variety.

We have selected from our own practice two more original and difficult movements, by which the skater may test his powers of alternating movement under the disturbing influences of a series of changes, which, without due care, will most assuredly bring him to a standstill.

FIRST ALTERNATING MOVEMENT.

Turn C as a start on the left, reverse Q D on the right, which leaves the skater on the outside forwards, on which he makes Turn C, which leaves him on the inside back of the same foot (the right), and from which he must obtain sufficient impulse to repeat the movement on the left, and again on the right continuously.

SECOND ALTERNATING MOVEMENT.

Turn C as a start on the left, Q D on right foot, which leaves the skater on the outside forwards, on which he makes Turn C, which leaves him on the inside back of the same foot (the right), and from which he must obtain sufficient impulse to repeat the movement on the left, and again on the right continuously.

THE LARGE LOOP, THE SERPENTINE LINE, AND THE TURN (OR Q) COMBINED.

This is quite possible and practical, and when we consider that it can be very much varied, and that the loops and turns can be doubled, and that there are the four edges, A, B, C, and D, as a foundation, it is apparent that we shall not run short of practice. We give a sketch of a few as a guide to their nature. (See Figs. 78, 79, 80, 81.) Fig. 81, as before mentioned, is an ideal figure at present, though there is no reason why it should not be skated.

Here again is new material for combined skating. We get almost lost in the immensity of our art.

The next figure is, we believe, the sole invention of Mr. Vandervell. He will therefore describe its nature in his own words, and he calls it

"THE ROCKING TURN.

"Following out a determined plan to pursue my practical researches into the art of skating to the end of all possible combinations, after having exhausted the Q, I began to consider the feasibility of making the change direct from the inside forwards to inside backwards, and *vica versâ*, and from the outside forwards to outside backwards and *vice versâ*, by the employment of a kind of turn, for which, from its nature, I can find no more simple yet I hope expressive name than the 'Rocking Turn.' It has been said by some enthusiast that even ordinary skating is somewhat akin to flying; in this new turn we approach still nearer (by the power we gain of gliding off to the side and in a somewhat similar manner) to the gambols that are exhibited by the feathered tribe, whose marvellous power of darting about in all conceivable angles and curves, forwards, backwards, and sideways, must ever be a source of profound admiration to the lover of natural history and philosophy. Another good illustration of the extraordinary turn is furnished in the 'paying off' of a ship that has just tacked to windward.

"This turn, as far as my individual experiences go, very far transcends in difficulty anything hitherto known to me, and I think it will be the case with most other skaters; and why is this? Because we shall have to incorporate in a turn an alteration of the inclination of the body sideways, for a curve in quite a different direction.

"It was about the year 1860–1861 that I first turned my attention to the subject, not from any suggestions of others, for at that time I had never heard it mentioned, either as a possible or impossible figure. The mere first thought of it is almost sufficient to place it in the category of things that, in the words of Lord Dundreary, 'no fellow can understand.' It was only after going very deeply into the matter that I began to think that it might be considered as *possible.*

"The pioneer has always a host of little obstructions to clear away from the intended track, and, owing to the succession of mild winters in England, I have not been able to devote as much practice to this turn as I should have liked; so that whilst it must be considered still in embryo, nevertheless the path is now, as far as I can see, tolerably clear, and I hasten to place before my brother skaters this final addition to our *répertoire* of movements coming under the class of pure figure-skating.

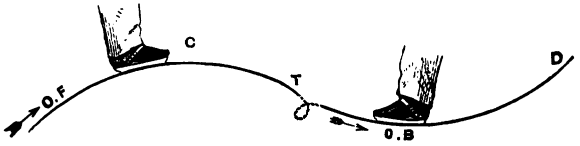
"To do this, however, properly, I must trespass, I fear, very much upon the patience of my reader, but yet I trust for his benefit, in handing over to him my entire experience of it in minute detail.

"In order to describe the principles upon which I founded this turn, I must refer him to page 148, where amongst the remarks upon turns we have said that, whilst they change the edge and the direction of going, yet the inclination of the body sideways is not materially changed. In order therefore to preserve the same character of edge (which is the point we now wish to carry out) whilst altering the movements from forwards to backwards, or backwards to forwards, it at once appears imperative that an alteration of the inclination of the body sideways, to the opposite side, at the moment of making the turn, or partial turn, which is to reverse the direction of going, must be made; and that if such an operation is practicable and skilfully carried out, it must preserve the character of the edge on which the skater originally started. Thus, an outside forwards would be converted into an outside backwards, &c., &c., as in the following diagram, which represents the plan upon which I designed the movement. And here I may observe that it will materially assist the reader in thoroughly comprehending and attempting practically to carry out this change, if he do as I did, viz. bend two pieces of wire into curves, and on each fasten, by a tight coil or two round it, other short pieces of straight wire standing up, and capable, by means of the friction of the coils, of being more or less inclined sideways, to represent the skater. This easily-made little model is the best instruction I can give him. He will be able to place the curves and mimic skaters in every gradation of position, and will be able to see plainly how very curious, novel, and delicate must be his operations for a re-adjustment of inclination and attidude. The difficulties are so great that I cannot imagine any but skilful skaters have a chance of doing this figure, and they from the foregoing and following hints will know how to set about it properly.

"FIRST DESIGN OF THE ROCKING TURN.

"C is supposed to represent a skater describing an outside forward curve in the direction of the arrow, interposing a turn at T, and at the same time altering the inclination of his body sideways, as shown more plainly by the dotted lines in Fig. 99, and the result will be as depicted; he will be left upon D, the outside backwards, the same character of edge (outside) upon which he started, but reversed as to direction.

"When I commenced to try and work out in practice this theoretical design, I found after several hours' trial that the difficulty of taking the edge clean off the turn in this particular form of curves (and without the intervention of a short opposite curve, which would render it tolerably easy; in fact, a modification of the Q,) was, from the slight practice then obtainable, beyond any practical skill that I could bring to bear upon it.



[Fig. 98.

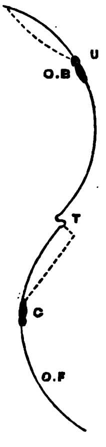


Fig. 99.

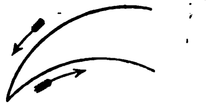


Fig. 100.

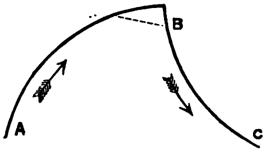


Fig. 101.

"But from these attempts the following important question, which I had not thought about before, was brought forcibly to my mind:—Can a clean turn be made upon a cutting edge? We must remember that in all the known turns the skater touches for a moment the flat of the iron, passes over it as it were, and it is this instantaneous poising on the flat of th[illegible] skate that gives a sort of relief. But it is quite a new feature, indeed, when we intend performing entirely upon one edge, and we can understand that if the skate has too much bearing upon the ice we shall stick fast. My experience has been with my ordinary skates of seven feet radius, a curve common in our club; and with such a pair, whilst I cannot doubt of ultimate success, notwithstanding my first failures in endeavouring to carry out my original design of this turn, yet I should much like to try a more highly curved skate.

"It was, however, in so practising that I made a new discovery, viz. that the position of the curves might be differently arranged without altering the principle of the turn, and that then, though extremely difficult, it would be easier to do thus, the skater going in a forward direction from A to B, and in a backward direction from B to C (Fig. 101); and that if a portion of the said curve were altered, as in the dotted line, it would still more facilitate matters, by raising the skater from his first inclination, and preparing him for the second by the peculiar action of centrifugal force at the time of the contemplated change.

"There must have happened at particular times, in the early career of all good skaters, a moment when, in spite of their efforts to the contrary, the skates have the mastery; and, knowing this feature, my fellow-labourer and myself have worked against the weak point, in the plan of this work. I will recall a few of the tendencies. The desire of the inside edge to curl in; the unwilling way in which turns from a back-edge come, and, when they do, often coming with a twist, causing another involuntary turn; the difficulty of the Q's, &c., are all instances of what I mean as having been felt in our early efforts.

"The skates seem inclined to assert their authority more than ever in the Rocking Turn, and the little alteration of the curve that I have just alluded to appears to me, as far as my experience goes, the antidote to it. It seems to give to the skater the necessary little bit of controlling power, that plainly tells the skates they must go where the wearer likes, and not where they like.

"We will suppose, then, that Figs. 98, 99, 100, and 101, represent about the practical limits of the range of position the curves may be placed in, and it is in all these gradations that a certain amount of altered inclination or rocking, exactly suited to their requirements, has to be interposed; hence the consummate difficulty.

"In my efforts, out of twenty trials, about one will be a success, and perhaps that is as much as can be expected; of the nineteen failures, every one will be what I call a false turn; a little portion of an opposing curve would have crept in thus (Fig. 102), instead of the true curve, as Fig. 103.

"Now the false turn (which, as the reader will observe, consists of a minute portion of an opposite curve before the change, yet so minute as hardly to be called a serpentine line) is really very small, and, notwithstanding its introduction, I have been (strange and impossible as it may appear) quite satisfied that I had correctly and truly altered the inclination, say from outside forwards to outside backwards; notwithstanding the small false curve[1] had crept in, I felt myself doing the movement correctly, and it has not been until I had examined the skate marks that I could have believed in my non-success—when I say non-success, I allude of course to the true clean-cut change.

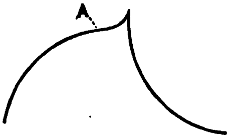


FIG. 102.

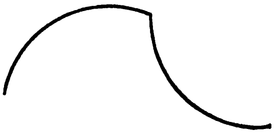


FIG. 103.

"We see then that even in this modification of the design of the original turn, the same tendency of an opposite curve to creep in exists. The skate appears to undergo some mysterious movement, which causes the introduction of the said opposite portion of curve, without apparently disturbing the skater, or hindering him—indeed it seems rather to assist him in the operation when making the change.

"But false turns, when we expect true, are not agreeable, therefore I am pleased to say I have occasionally succeeded in doing what I cannot but consider the true turns, from all the edges, A, B, C, D, even though, as from want of skill or a more highly curved skate, a slight scrape might be present.

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[1] This false curve is on the *outside* edge, as will be seen from the description of "Cupid's bow," but not a curve of relative equilibrium.—T. M. W.

"If ever it were necessary to turn on the toe or heel, as the case may be, it is so in this Rocking Turn, which, despising all half-measures, refuses to work at all under any other *régime.*

"I next tried the change in its double form, thus (Fig. 104), and succeeded after the same fashion, but only after numberless failures, for they are the most difficult movements I have ever encountered in skating (and I have always been fond of difficulties), requiring such alterations of position, and care in retaining the balance, that they can only be brought into subjection after much practice and experience.

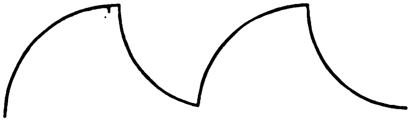

FIG. 104.

"It can be doubled of course on all the four edges A, B, C, D, and perhaps reversed.

"The entire changes will be—

"*Rocking Turn A.*—Inside forwards to inside backwards.

"*Rocking Turn B.*—Inside backwards to inside forwards.

"*Rocking Turn C.*—Outside forwards to outside backwards.

"*Rocking Turn D.*—Outside backwards to outside forwards.

"There will then be a combination of more than one turn—compound turns. Forecasting, too, the future progress of our art, we can see looming in the far distance the incorporation of the large loops, simple and compound, of ordinary turns simple and compound, with Rocking Turns simple and compound, and the latter again with Q's simple and compound.

"And what more shall I say? Why, to look forward to the time when we can have the Rocking Turn introduced into combined skating.

"Fresh marks appear on the ice, approaching the form of letters, as Fig. 104*a*.

"Finally, whilst this turn opens out countless delights, and (I may add) tumbles, for the figure-skater, we find with somewhat of a feeling of regret that it entirely exhausts the subject as far as fresh elements to combine are concerned, for we have explored them all. Although it may be suggested by some that we might attempt to turn all the turns the contrary way, yet this is not practical, and even if it were, no new combinations would arise; therefore our pleasing task is at an end so far.

"Let not the reader, even if he should accomplish all that we have described as actual results and all that we have forecasted, sigh that there are no more worlds to conquer, no more victories to be achieved. Were this not a true art, he might have occasion to do so; but it is, and in it he will always be a learner, seeking the ever far-off goal of perfection in his illustrations of the art of skating, which, taking into account its scientific beauties, its elegance, its invigorating and health-giving qualities, may fairly claim the highest place in all manly recreations, especially in that peculiar season when 'the face of the deep is frozen, and the waters hid as with a stone.'"

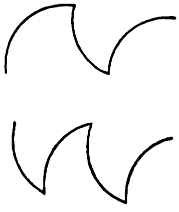
FIG. 104*a*.

We have lately ascertained that the Rocking Turn was a favourite with Mr. Goodrich, who with Mr. Moe performed at the Crystal Palace, in the year 1869-70, as "The Champion Skaters." The movement formed part of a combination to which they gave the name of "the five edges."

As described by Mr. Moe, the combination consisted of the following changes:—

Start on a curve of inside edge forwards, and change to outside forwards; turn to inside back, and change to outside back; turn to inside forwards. At this point, instead of changing to outside forwards, another turn is made to *inside back* (the Rocking Turn), and there a change to outside back is effected, &c.

If the movement be started on the inside edge, the Rocking Turn will be made from that edge (see Fig. 105); but if the start be effected from an outside edge, the Rocking Turn will then be taken from that edge. For instance (Fig. 106), start on a curve of outside edge forwards, change to inside forwards, turn to outside back, change to inside back, turn to outside forwards, and turn again to outside back, &c. Mr. Moe says that Goodrich could do this most difficult turn with the greatest facility, and that at the moment of change, say from an inside forward to an inside back, he threw the unemployed leg across, at right angles to and in *front* of the employed foot; and in a turn from a back edge to a forward edge, he threw the unemployed leg across at right angles to and in *rear* of the employed foot.

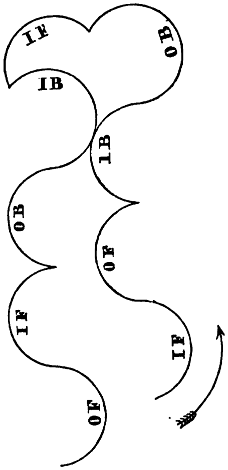

Fig. 105.

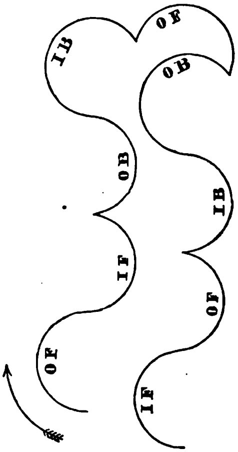

Fig. 106.

CHAPTER XIII.

GRAPE-VINES.

ALTHOUGH it will have become apparent to our readers that we are great advocates for pure skating, as exemplified by long-sustained efforts on one or the other foot, yet it would be absurd to ignore the beauties of the two-footed figures which are known to most figure-skaters as "the grape-vines."

These figures undoubtedly originated in Canada, and although one frequently hears bystanders say, "Oh! I remember that being done twenty years ago," they are certainly mistaken; as we think it extremely doubtful whether even in Canada the grape-vine had been skated at that period, and it may be said without fear of contradiction that no Englishman skated the figure in England fifteen years ago.

The fame of the grape-vine had gone forth, and writers on skating matters felt bound to attempt diagrams and descriptions, but these failed utterly to give any idea of the true grape-vine. For instance, Cyclos, in his "Art of Skating," second edition, gives what purports to be a diagram and description of the grape-vine; but the diagram is quite inaccurate, and in no way represents the grape-vine, as no change of edge is shown, and the cusps all point the same way!

In the year 1871, one of the writers sent to the *Field* newspaper a description of the grape-vine, with a diagram showing the position and order of the feet during the complicated changes, and it is believed that this was the first true description and diagram ever given to the public.

In the third edition of his pamphlet on skating, published in 1873, Cyclos copies the *Field* description and diagram, and acknowledges that the cusps of his diagram in the second edition of his work should have pointed different ways, and reproduces his original diagram with the cusps pointing correctly! but this corrected diagram again shows Cyclos's entire ignorance of the movement, as he has *omitted the change of edge* which should precede the first and third cusp, and which is one of the principal ingredients of the grape-vine.

All two-footed movements are most difficult to describe, and principally for the reason that, although the diagram may give a correct representation of the figure, as made on the ice by the skate, and may even give the position of the feet at the moment of change; yet, in consequence of one foot preceding the other, the diagram by itself does not enable a person unacquainted with the figure to follow the various changes. There is no particular difficulty in skating the *ingredients* of which the grape-vine is composed, as they consist of simple changes of edge and the turn used in the common and the reverse 3's; but it is most difficult to catch the trick of combining these various changes of edge and turns. We have frequently tried for days to teach a good skater, and have failed. Perhaps the best method to learn will be to take the diagram (which has been drawn with great care, and which shows the order and position of the feet at the various changes) and force the feet to follow the curves and changes given: any difficulty that may arise will probably be solved by a reference to the written description.

Assuming that the skater has educated his feet to follow the curves and changes as shown by the diagram, let him not run away with the idea that he has mastered the grape-vine; he is then in the early stage of doing it, and every change will be made with a jerk and a palpable effort.

It must go as "merrily as a marriage bell," without the slightest check, and without its being apparent where the motive power comes from. Practice alone will give this facility, and in practising it must be borne in mind that in the formation of the cusps from a back to a forward edge, *the toes cannot be too much turned in;* and in the cusps from a forward to a back edge, *the toes cannot be too much turned out.*

The thick line of the diagram (Fig. 107) represents the movement of the right, the dotted line the movement of the left foot.

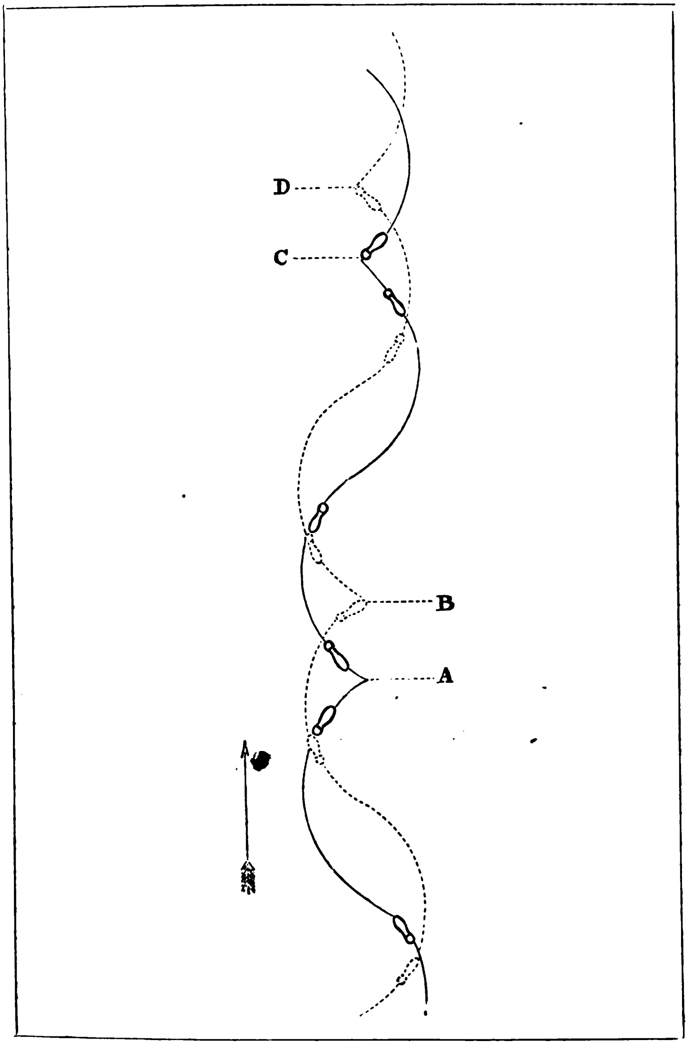

FIG. 107.—The Single Grape-vine.[1]

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[1] See also directions in the Chapter on Roller-Skating for acquiring the Grape-vine.

Start with the feet some way apart, both on the inside edge, and force them towards each other on that edge in a forward direction; when they are close together, turn in the toes as much as possible, and allow the right foot to pass before the front of the left and almost at right angles to it. As soon as the feet have crossed, the body must be slightly inclined to the right, left shoulder forward, the right leg describing a curve of outside forwards; in the meantime the left leg, being, say half a second behind the right in point of time, is also describing a curve of outside forward, but in an opposite direction. Arrived at A, the body is turned as in making the simple 3 (3 C); and the instant before the right leg forms the cusps at A, the left, having changed the edge to inside forwards, passes in rear of it and continues the curve to B. The right leg, having formed the cusp, now passes on a curve of inside back in rear of and almost at right angles to the left.

At the moment this is done, the left forms a cusp and follows the right on a curve of outside back, but by the time the left has begun to describe the curve of outside back, the right has changed the edge to outside back also, and directly afterwards, the left making the change to inside back, the right passes in rear of and almost at right angles to it. (In making these changes of edge in a backward direction, the left shoulder is kept back.) The right arrived at C forms a cusp, by a turn to inside forwards, the left on the curve of inside back just clearing it, and coming in front of and at right angles to it; the right shoulder having been brought forward when the cusp was formed by the right leg, the right foot passes in front of the left on a curve of inside forward; the left, having formed the cusp at D, following and crossing it behind on a curve of outside forwards; and as this was the position of the feet at starting, by repeating the movement above described the grape-vine becomes "an accomplished fact."

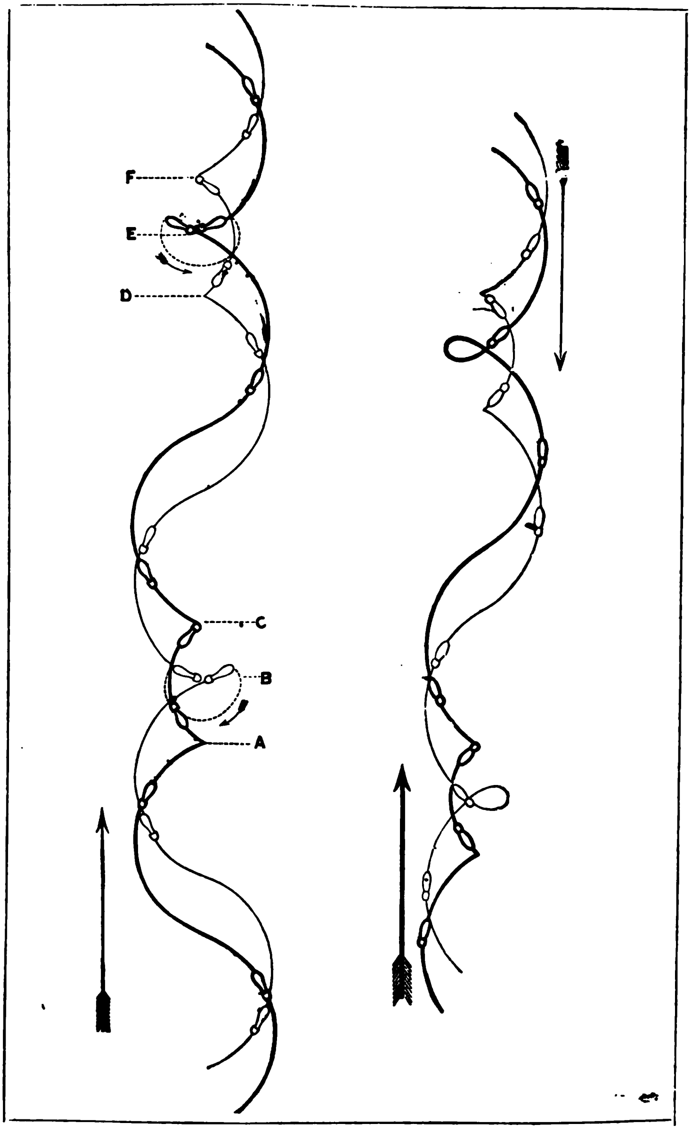
When the skater can do the grape-vine really well, he will dispense with the changes of edge, and do the whole movement on the outside edge, some of the curves thus made being similar to the second curve to the Cupid's bow described at p. 180.

THE DOUBLE GRAPE-VINE.

The double is to a certain extent an amplification of the single grape-vine, and corresponds to the *trois temps* in waltzing, in contradistinction to the *deux temps;* the action of the feet in the double grape-vine being similar to the steps made by the dancer in executing the *trois temps* waltz.

The thick line of the diagram (Fig. 108) denotes the movement of the right, the thin line the movement of the left foot. All the changes of edge are done in a forward direction, there being no change of edge in a backward direction as in the single grape-vine; this is, of course, assuming the start to be made in a forward direction. If the start be effected backwards, the changes of edge will then occur on the backward curves only. The thick arrow denotes the movement when done in a forward direction; the thin arrow when done in a backward direction.

Start as in the single grape-vine, all the movements of both feet being similar to that figure, until the left foot arrives at the cusp B on a curve of inside edge forwards; while this curve is being skated by the left, the right foot has passed behind it at right angles on the back inside edge, and arrives at the cusp C; at the moment of its arrival at this point the left is swung round on the inside edge rather more than a half-circle (as indicated by the dotted line and small arrow in the diagram Fig. 108), thus completing the cusp at B, (or if not done with great rapidity, a loop, Fig. 109); and precedes the right, which (having completed the cusp at C) follows it on a curve of outside forwards. The left foot being thus in front of the right, the same movements are gone through by the skater, but with the difference caused by the left foot being to the fore, which has the effect of making the cusps (or the cusp loop and cusp) point in an opposite direction, and two cusps are now formed with the left, and one, or a loop, with the right foot. After the final cusp at F has been skated, the right foot is again passed in front of the left; and this being the position of the skater's feet when he began the figure, he is able to repeat the movements.



FIGS. 108, 109.—The Double Grape-Vine.

If the various changes on either foot be analysed, it will be found (assuming the skater to start with the right foot first) that, up to the time when the left takes precedence of the right, the movement of the right foot consists of a change of edge from the inside to the outside forwards when a half-double is skated. The movement of the left is curious, inasmuch as it consists of a change of edge from outside to inside forwards, when a cusp or loop is made by throwing the body round so that the skate, instead of describing a quarter circle, and so getting into the natural curve of outside back, continues the wheel (to use a military term), and if done slowly a loop instead of a cusp is formed (see Fig. 109), until it is on a curve of relative equilibrium of inside forwards, corresponding in direction to what would have been a curve of outside back, if only a quarter, instead of a half, circle had been described. The power to do this is gained by the right foot being on the ice at the cusp C, and so acting as a pivot on which the left can revolve after the manner of the American "toe steps." If the right did not so act as a pivot, the cusp at B (when a cusp and not a loop is made), formed as it is of a curve of inside forwards to another curve of inside forwards in an opposite direction, would be a feat difficult of accomplishment, as will be found if the skater attempt to form a cusp as at B on one foot without aid from the other.

The motive power is obtained as in the single grape-vine by forcing the feet together on opposing edges of the curves preceding the three turns. To effectually conceal the motive power is perhaps more difficult in the double than in the single grape-vine, as the opportunities for acquiring motive power occur less frequently, in consequence of there being no opposing curves in a backward direction when the figure is started forwards, nor in a forward direction when started backwards.

To skaters who can do the single grape-vine, or even its forward motion, with either foot to the front, the double grape-vine presents no difficulty; but if the single grape-vine has been learned with, say, the right foot in front, and if the movement with the left foot in front be unknown, the skater will probably be immensely puzzled by seeing the two grape-vines interlaced by the alternation of the single and double, the latter being sometimes in a forward and sometimes in a backward direction.

THE PHILADELPHIA GRAPE-VINE.

This is a grape-vine new to the English public within the last few years. In the Second Edition of this work a diagram was erroneously given as the Pennyslvanian grape-vine, which was in fact a diagram of the Philadelphia, although slightly inaccurate, inasmuch as a loop and three cusps instead of four cusps were drawn. (See Fig. 110.) The thick line denotes the right foot when the movement is skated backwards, and the thin line the right foot when the movement is skated forwards. As the Philadelphia grape-vine is usually skated backwards, we describe that first. With the feet slightly apart, the skater starts by drawing the feet together on the inside edges, and allows the right to pass in front of and outside the left, the legs being thus crossed and the two feet parallel to each other, with the *outsides* of either foot in proximity. In this position the right shoulder is suddenly thrown back, and instantly after the right foot is flipped back with a sudden twist of the ankle to the right on a curve of outside forward, the left following on a curve of inside forwards. This brings the skater round half the circle, and the feet become disengaged; and the subsequent turn, which consists of an ordinary three on the right and a reverse three on the left, as shown in the diagram, brings the skater to the position he started with, but with the right foot leading in a backwards direction; and this enables the left to be brought across, outside of and parallel to the right, and flipped back to the left, and so on. The difficulty of the movement consists in flipping back the outside foot, and this is done by a sudden twist of the ankle; but unless the body is turned in the direction of the desired turn before the ankle is attempted to be twisted the movement becomes almost impossible. Skated forwards, the Philadelphia is begun as the single grape-vine with the chain step, and assuming that the right is passed in front of the left, the left is brought up outside of and parallel to it, and the body being

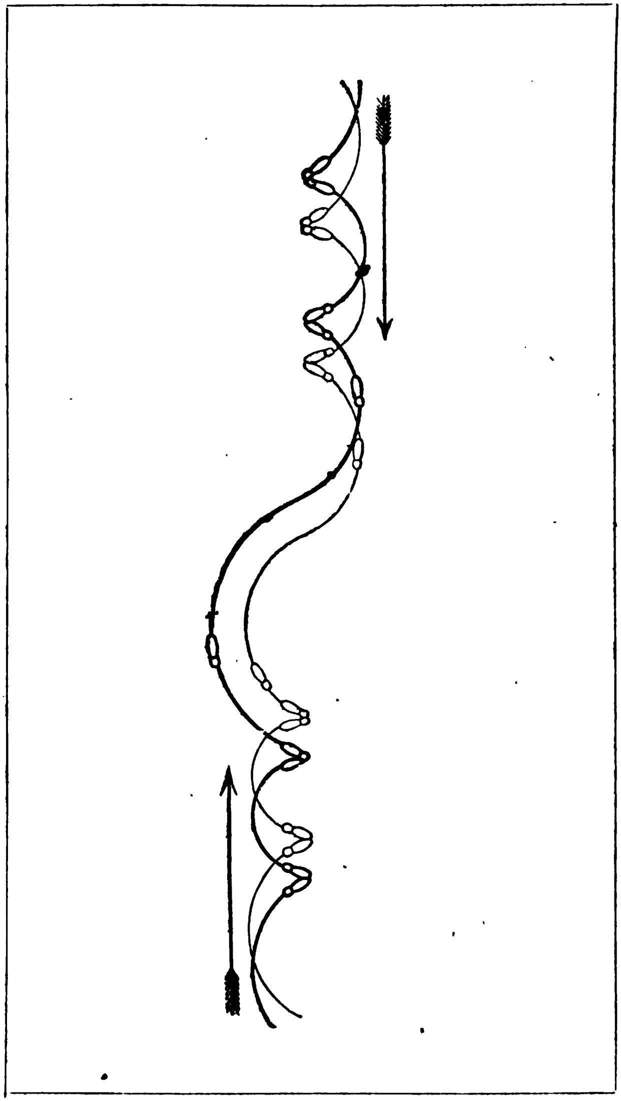


FIG. 110.—The Philadelphia Grape-vine.

turned to the right, the left foot is flipped back heel foremost on a curve of outside back, the right following on a curve of inside back; when the feet become disengaged, and the subsequent turn is skated as in the turn from backwards to forwards of the single grape-vine. This brings the skater to the original starting position, but with the left foot leading, by which the movement can be repeated with rotation to the left. The movement skated forwards is more difficult than when done backwards, the flipping back of the foot, heel foremost, being very awkward to acquire, and a great deal of practice is necessary before the movement is skated accurately and easily. The eight described in the chapter on Roller-Skating as composed of two curves of outside backwards joined by the half revolution of the Philadelphia twist is an extremely graceful movement on ice.

THE PHILADELPHIA SPREAD-EAGLE GRAPE-VINE.

This is a curious variation of the Philadelphia skated backwards (see Fig. 111). It is begun as the Philadelphia, starting backwards; the right foot is brought outside of and parallel to the left and flipped back as in that movement, and when half a revolution has been thus made the rotation is stopped by the left, which has followed the right on a curve of inside forwards, being turned to inside back, thus placing the feet in spread-eagle fashion, the right foot leading. When this has been sustained about a yard, the right is turned to outside back, and the left immediately crosses it and takes up its position outside of and parallel to it, when the movement is repeated with the rotation to the left.

THE PENNSYLVANIAN GRAPE-VINE.

The single and double grape-vines before described are to a great extent alike in movement, the double being in some respects the amplification of the single. The feet in these movements *are never doing the same curves and turns at the same moment of time.* In the Philadelphia and Pennsylvanian grape-vines there is a great sameness, as the feet when doing

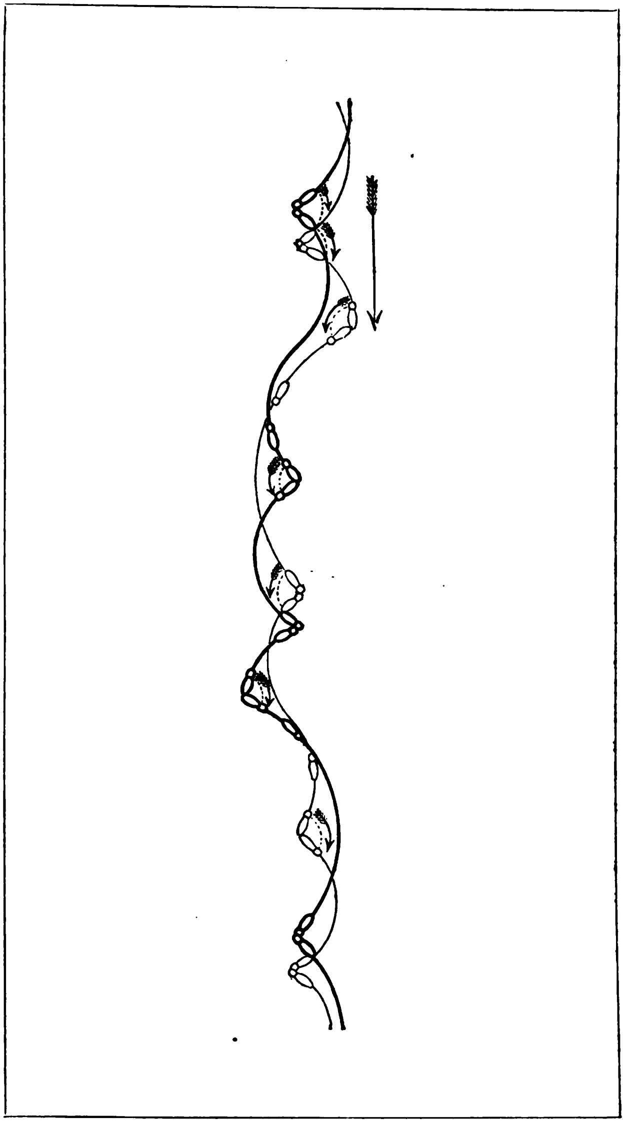


FIG. 111.—The Philadelphia Spread-eagle Grape-vine.

the first two of the four cusps of which the Philadelphian is composed, and when doing the two cusps and the loop or abortive loop, in the nature of the second turn of the Cupid's bow of which the Pennsylvanian is composed, are locked together, and are doing corresponding curves and turns at the same moment of time. With the exception of the movement of the feet, in opposing curves previous to the formation of the cusps and loops, nothing in the Pennsylvanian has been borrowed from either the single or the double grape-vines; but from the locked feet while skating the half revolution of the Philadelphia has probably come the whole revolution with locked feet of the Pennsylvanian.

As in the double grape-vine, all the changes of edge are in a forward direction—that is, of course, assuming the start to be made forwards.

The thick line of the diagram (Fig. 112) denotes the movements of the right, the thin line the movements of the left foot. The broad arrow shows the direction forwards, the thin arrow backwards.

Start as in the single grape-vine, with the right foot first, on a curve of outside edge, the left following on a curve of inside edge; looking at the diagram alone, the cusp at A would appear to be the first formed, but it is not so, as the right foot arrives first at B, and the left, instead of following beyond it as in the double grape-vine, passes in rear and to the right of it, the feet being thus parallel to each other at the moment when the cusps A and B are formed. As the right has arrived at B (on a curve of outside) just before the left has arrived at A (on a curve of inside forwards), it will be apparent that the feet are crossed, the outside of one foot almost touching the outside of the other. In this somewhat awkward position the body is swung round a whole circle to the right, both skates seemingly being on the flat of the irons, but in reality on different edges, hereafter to be described.

This swinging the body round a whole circle causes the feet, when locked together as above described, to make the two cusps at A and D, with the miniature Cupid's bow between them, shown in the diagram at B C; but from the moment when the feet are locked to the time when they are disengaged,

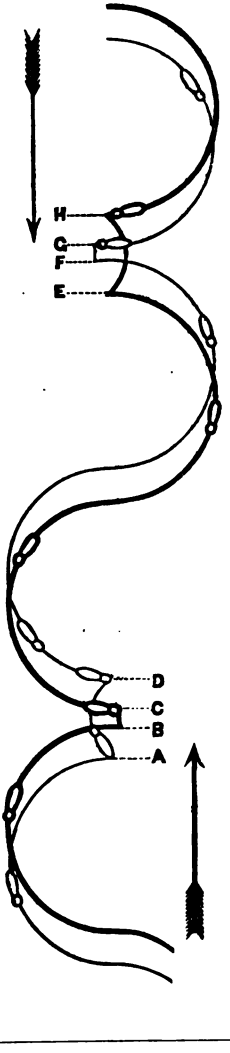


FIG. 112.—The Pennsylvanian Grape-Vine.

the corresponding movements of the feet are simultaneous. When the body has been swung round so that the face of the skater is in the same position as at starting—that is, when the whole circle has been completed—the right foot is allowed to go a little in advance, in order that the left may become disengaged, and so pass to the front in rear of the right heel. The feet being thus unlocked, the left takes precedence of the right, and arrives first at F, to be followed in rear by the right, which arrives at E; and when the feet are thus crossed, the body is swung round to the left, and the circle being completed, the right again takes precedence of the left, which is the position of the feet at first starting.

The difficulty of learning the single and double grape-vines consists principally in the failure of the learner to see how the movements are done, the movements themselves being comparatively easy; but with the Pennsylvanian the difficulty lies in the movement itself, as, the feet being crossed, and so locked together, a great nicety of balance is necessary in twisting the body round, and considerable strength of leg is requisite to force the feet together on the opposing curves between the one pirouette and the other, so that sufficient motive power may be obtained to continue the movement.

If the various changes be analysed, it will be found that the right foot, assuming the movement to be begun with that foot to the fore, after a change of edge from inside to outside, arrives at B on a curve of outside edge. The short curve between B and C, to be a curve of relative equilibrium, should be on the inside back, but as a fact it is a curve as in the Cupid's bow, of outside back; the second turn made at C places the skater on a curve of outside forwards. The movement of the left consists simply of a change of edge from outside to inside, from which edge a reverse half-double is skated, bringing the skater, after the formation of the cusps at A and D, again on to a curve of inside forwards. These are the edges in reality used in the "pirouette," though it would appear to an on-looker as if the body were twisted round a whole circle on the flat of the skate-irons.

The Pennsylvanian grape-vine can be varied by starting backwards, by interlacing it with the single or double, or by pirouetting two, three, or four whole circles instead of one; but a very good balance is necessary to do more than one revolution neatly.

The Pennsylvanian grape-vine is known in America as the "Augur Whirl."

CHAPTER XIV.

THE SKATING CLUB FIGURES.

If the learner has carefully studied the figures described in the foregoing chapters, and if by constant practice he has acquired the art of skating them, he will be quite competent to begin skating in concert with others.

The Turn C (the ordinary figure 3) can be done by two or four skaters standing opposite; so also can the double odd turns.

The figure 8 can be likewise so treated. We do not dwell much, however, on these individual movements, because by far the best arrangement of combinations has been gradually condensed into a series of figures that have been called a reel or quadrille, but which we shall now designate (as indicating the source from which they have emanated) the "Skating Club Figures," or, shortly, the "Club Figures."

These can be participated in by any number of skaters not less than two or more than nine. Four, perhaps, is the best general number, but figures performed by a party of six or eight are now frequently skated by members of the Club, the whole of the ordinary movements being carried out without a hitch.

All who take part must not only be good skaters, but equally matched in ability as to power and the great art of control, and it is a great help if the pair who lead the figure are very accurate in their skating. The beauty of the figure consists in a series of different movements performed with great accuracy and absence of confusion, requiring therefore all the very highest qualities of good skating. One of the number must be selected as captain or leader, and it is his duty to call out in a clear voice, on passing the centre, the movement he requires to be done; therefore the first requisite is a complete knowledge of the technical names, and what they imply. This may be readily learnt by tracing the lines on paper from the descriptions and diagrams.

To commence a figure the skaters stand opposite each other, as on the sides of a square. The first pair start together, and the second pair directly afterwards, all doing the same movements, the object of this retarded start by the second pair being to avoid collision by allowing the first pair to get clear of the centre before the second pair arrive there.

Should three, five, seven, or nine skate, the odd man "cuts in" after all the others have started; this requires good judgment, and is certainly a post of honour.

Should six skate, we recommend the arrangement to be as a hexagon, the three pairs starting one after the other.

Seeing the truthfulness of curves required in these figures, it is better not to attempt them in windy weather; first, because it is then impossible to keep them accurate; and secondly, by continued and fruitless efforts to do so, the skaters get disconcerted, and fancy they are skating badly, when perhaps in reality the contrary is the case.

Before commencing it is necessary to make a central starting-point, which is best done by putting down a handful of loose snow or ice-cuttings, if the ice is clear; but if slightly covered with rime or snow, rubbing away a place the size of a hat will be found the best plan. At the Skating Club an orange is generally used as a centre.

It is the practice to begin with the right foot from a start or stroke from the left. In the figures illustrating the combined movements, the diagrams formed by two skaters, both starting with the right foot, are shown; the thin lines denote the diagram made by the man facing north, the dotted lines by the man facing south. By adopting these different lines, it is hoped the reader will be able to follow out the evolutions of each skater.

It would seem, looking at the diagrams of the Skating Club figures, that each skater started and came back in all th[illegible] figures to the original starting-place of his partner; but this is not so. The diagrams are simply intended to show the movements and edges used, and not to represent the amount of circling round the centre occupied by the skater in each movement.[1] With a view to illustrate this circling we give two diagrams showing the circle cut into quarters, and the places where the changes, relatively to the circle, are made in the figures "Threes," and "Once back and forward." It is hoped that these diagrams will be the means of enabling all skaters who practise the Club figures to acquire that most necessary quality, uniformity in the amount of circling round the centre.

In the Club figures, especially when there are four or more performers, it is essential that they should all start away from the centre at corresponding angles, so as to ensure each man keeping in his own quarter circle, and so equidistant from his right and left-hand neighbour; and to effect this there is no better rule than the following. Assuming that the figure is to be commenced by striking from the centre on the right leg, let the skaters go well up to the centre, and from thence strike as much as possible to the left (*i.e.* right shoulder forward), and *vice versâ*, when on the left foot; and this always applies to any movement emanating from the centre. By adopting this plan every one starts from the centre at more or less the same angle, because if each skater go close up to the centre before starting, he is unable to go on a curve of outside edge on the right foot more than about a yard to the left of an imaginary line A B, Fig. 113, drawn through the centre; hence every one getting as far to his left as he can, all start from the centre at pretty nearly the same angle. Once started, each skater in all movements composed of circling round the centre should keep the centre and his partner in a straight line.

To skate the Club figures properly, each skater should be so well up in the figures that he can obey almost mechanically

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[1] I have tried to draw the Club figures, showing accurately the place where each change should be made, but find that they would occupy so much space that it would necessitate folding plates, a very objectionable feature in a book which is probably more referred to on the ice than in the library. I have therefore contented myself with the diagrams Figs. 113 and 114, which I hope will serve as a precedent, as it were, to the amount of circling round the centre in the other movements.—T. M. W,

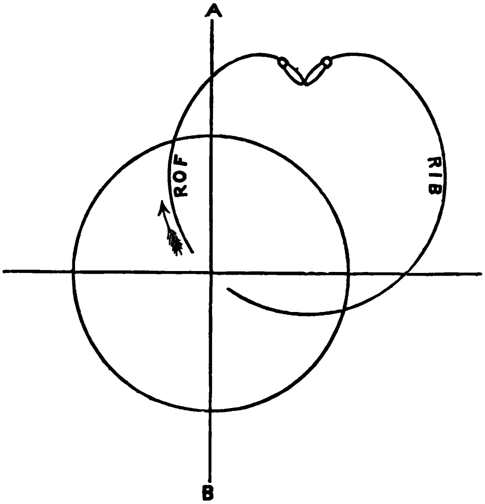

FIG. 113.—Threes.

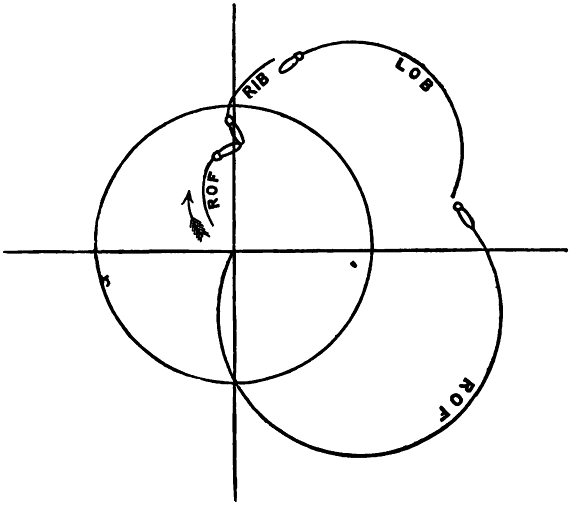

FIG. 114.—Once Back and Forward.

the word of command. One frequently sees the figure spoiled by some man suddenly stopping and saying, "Oh! I beg pardon, I thought you meant so and so." Again, it is very essential that the same words of command be universally adopted, so that strangers meeting on the ice may be enabled to skate in combination.

The skater who has mastered all the figures described in the foregoing chapters as isolated figures has yet to practise assiduously before he can take his part with credit in a combined movement, paying particular attention to the right amount of circling round the centre. If he should have the misfortune to be without a companion with whom to skate the Club figures, he can still qualify himself by making a centre, and going through the figures by himself and "dummy." It is splendid practice in making the skater skate true to a point. There are three golden rules to be observed in combined skating: First—Always strike boldly away from the centre at the beginning of a figure; secondly, always make the curves sufficiently large; and thirdly, always in all movements consisting of outside back look at your partner as long as possible over the shoulder of the leg executing the movement, taking care to have the centre in a straight line between him and you. Reference to Figs. 113 and 114 will show the necessity of attending to the first rule. The second rule ensures good and bold skating, and the third rule helps very much to carry out the precept of the second rule.

It will be seen on reference to Fig. 114 that "once back and forward" occupies rather more than half the circle. A similar space, relatively to the circle, is occupied by "once back," "once back and meet," and "once back entire." As a three and back occupy about a quarter of the circle, "twice back and forward" would occupy a quarter of the circle more than is shown in the diagram of "once back and forward," &c.

Another most essential point to be remembered is, that the skaters should always watch each other's movements, looking each other in the face, as fencers or boxers do; the one skater will then so adapt himself to the pace and movement of the other, that on coming to the centre they will always be face to face.

The most difficult figures are the "back entire" and the "back 8's." The "back and meet" is considered the easiest, notwithstanding which fact it is a very effective figure, capable of great development, as we shall see hereafter.

The simple figures contained in the first series can be varied in a very pretty manner when four men skate them, if they all skate well and have thorough confidence in each other's powers. The variety we speak of is caused by the first pair starting on the right and the second pair on the left leg. In the figures belonging to the first series above described, four men skating together, circle round the centre in the same direction, and there is no danger of collision until the centre is arrived at; but in the proposed variety, the first pair having started on the right leg are circling to the right, the second pair to the left. To avoid collision, the first pair should skate all the figures small, and so allow the second pair to pass on the outside, as, circling in different directions, they not only come together at the centre, but pass each other at the outside of the circle. The effect is exceedingly pretty, but it should never be attempted except by skaters who are accustomed to skate together, and who are capable of instantly altering the direction of a curve by means of the serpentine line.

The Skating Club figures are divided into five series, the second, third, fourth, and fifth being much more modern than the first, of which most of the movements were skated some fifteen years before the formation of the London Skating Club in 1830.

SKATING CLUB FIGURES: FIRST SERIES.

Threes C. (Fig. 115.)
Once back. (Fig. 116.)
Twice back.
Twice back and big 3 turning at the centre.
Three times back.
Once back and meet. (Fig. 117.)
Twice back and meet.
Three times back and meet.
Once back entire. (Fig. 118.)
Twice back entire.

Three times back entire.
Once back and forwards. (Fig. 119.)
Twice back and forwards.
Three times back and forwards.
Forward 8's.
Forward 8's twice.
Back 8's.
Back 8's twice.

In attempting the following figures, it must be borne in mind that each figure has to be executed alternately on one and the other foot: consequently, in doing any movement with the right foot, the skaters must at the commencement of the movement pass each other right shoulder to right shoulder, and if, on returning to the centre, they are left shoulder to left shoulder, the figure can be at once repeated on the left leg; but if on returning to the centre the skaters find themselves right shoulder to right shoulder (as in the back entire), a three C must be skated on the right, before the movement can be repeated on the left leg.

EXPLANATION OF FIRST SERIES.

Threes (Fig. 115).—The leader calls "Threes" (that designated C being the one always used), upon which the first pair (of which he himself forms one), being opposite each other, start together on the right foot, each passing by the other's right shoulder, and each making the turn, and coming by a long run on the tail of the three, into very nearly the other's original starting-place. By repeating the movement on the left foot, each skater is brought to the spot from which he originally started. The second pair of skaters, being at right angles to the first pair, have of course followed the actions of the first at a well-judged interval, so as just to avoid collision.

Once back (Fig. 116).—This is commenced by a 3 on right, then the left foot down for outside back for some distance, then another 3 on right, which has the effect generally of bringing each skater nearly the quarter of the circle past the starting-place of his partner, that is (supposing four are skating) almost into the original starting-place of his left-hand neighbour.

Twice back.—This is commenced, as in once back, by a 3 on right, outside back on left, again 3 on right, outside back on left, finishing with a 3 on right, the various movements bringing each skater round nearly the whole of a circle. This repeated on the left brings them to their original fronting. This figure can be varied by making the turn of the last three *at* the centre; the order is then "twice back big three, turn at the centre." It is done precisely as "twice back," except that the last three is

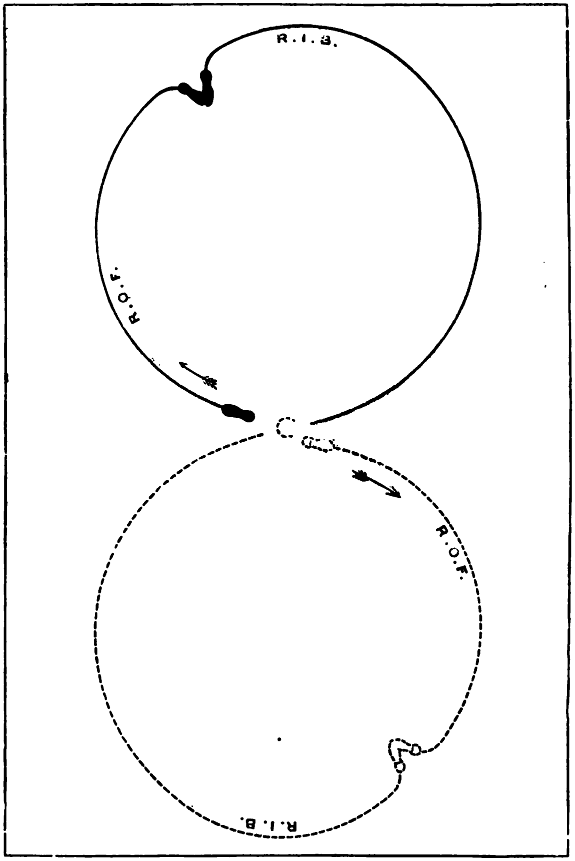

FIG. 115.—Threes.

made double the ordinary size, the skaters running to the centre on the curve of outside edge forwards, which composes the first part of the three, effecting the turn at the centre and coming back to the centre on the tail of the three.

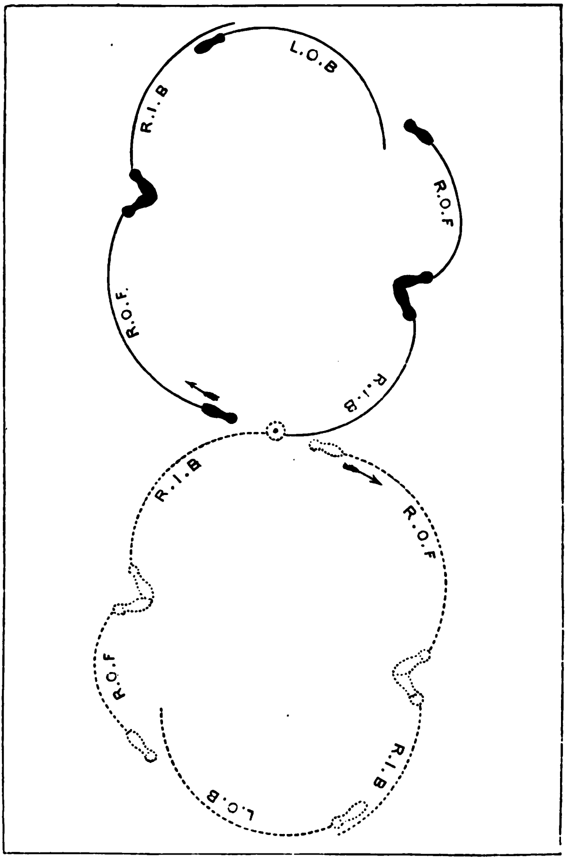

Fig. 116.—Once Back.

Three times back.—This is done as the last, with the addition of one more 3 and outside back before the final 3 home, &c. *This generally* brings each skater to the original starting-place of his right-hand neighbour, a circle and a quarter being skated.

Once back and meet (Fig. 117).—This is commenced by a 3 on right, outside back on left, continuing that edge on to the centre, where the skaters meet each other back to back; and when nearly touching, a 3 on right is skated. The three and back bring each skater round rather more than half a circle, so that the first pair of skaters, when arrived at the centre back to

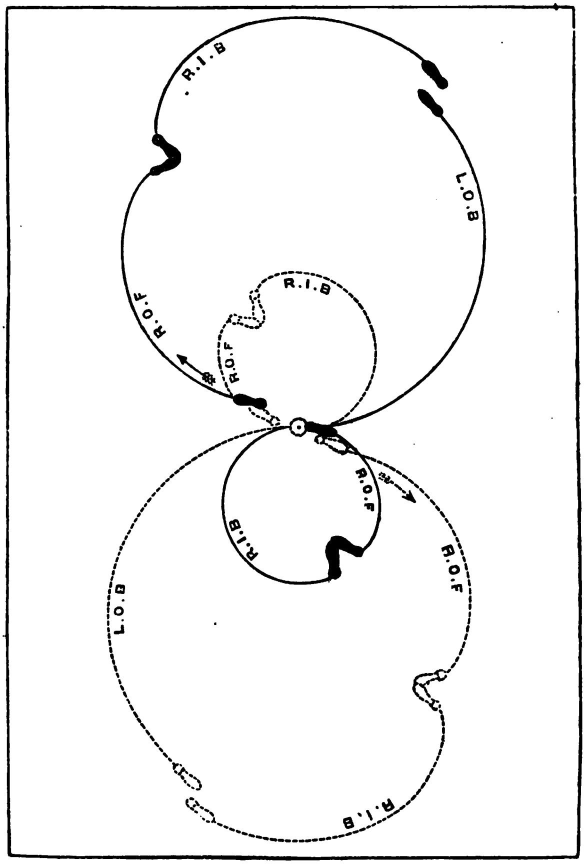

Fig. 117.—Once Back and Meet.

back, are almost in each other's original starting-places; the 3 which is skated after meeting back to back alternates the feet, and by repeating the figure on the left, each skater is brought to the place he originally started from.

Twice back and meet, and *Three times back and meet*, are extensions of the figure on the same plan as detailed above, viz. putting in two or three 3's, with their proper quota of back, before the final run into the centre; each three and back taking the skater round about the quarter of the circle.

Once back entire (Fig. 118).—This is commenced by a 3 on right, outside back on left, continuing that edge on to the centre, where the skaters meet each other back to back, and when nearly touching, the right is placed behind the left leg, and a stroke from the cross effected, which throws the skaters on the outside back of the right leg. On this edge they continue for some yards, when the left leg is put down, and a turn on it made, bringing each skater to the centre, but right shoulder to right shoulder. As we have before explained, in order to repeat the movement on the left leg, each skater should be left shoulder to left shoulder, and to effect this a single 3 becomes necessary. The relative position of the skaters up to the time when the stroke from the cross is effected is similar to that of "once back and meet," viz. they have absorbed rather more than half the circle; the cross stroke and three being similar to the three and outside back with which the figure was begun, each skater finally arrives at the centre in the original starting-place of his partner.

Twice back entire and *Three times back entire* will easily be understood, each three and back absorbing about the quarter of the circle.

Once back and forwards (Fig. 119).—This is commenced by a 3 on right, outside back on left, outside forwards on right, on which edge each skater, having gone rather more than half the circle, runs to the centre rather beyond the original starting-place of the other, and at about the same angle as when skating "once back;" and being left shoulder to left shoulder, they are in a position to at once repeat the movement on the left foot.

Twice back and forwards and *Three times back and forwards, will easily be* understood.

Forward 8's.—These will be done when on the outside forwards of the last figure, struck as usual, or from the cross, which latter we prefer.

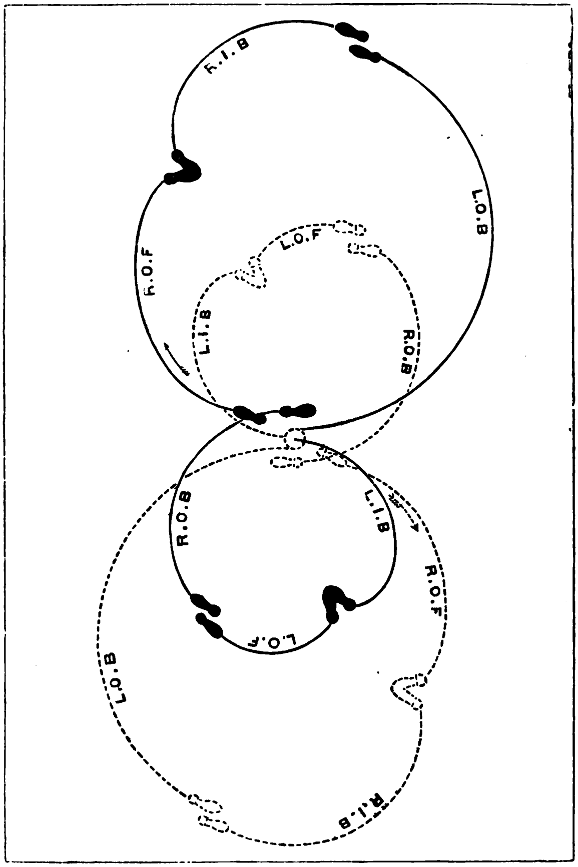

FIG. 118.—Once Back Entire.

Forward 8's *twice* will of course mean the 8 itself done twice continuously, without a break in the above movement.

Back 8's will be taken up from the back entire, therefore from the cross impulse.

Back 8's twice will mean the 8 itself done twice over, after such a movement. In executing these eights each skater at the end of each curve arrives at the starting-place of his partner, and there is no circling round the centre.

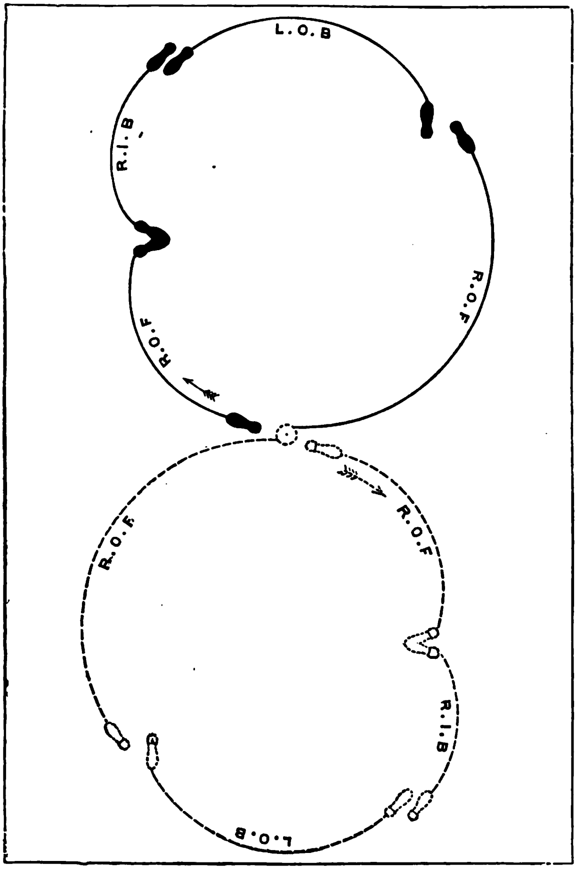

FIG. 119.—Once Back and Forwards.

To the figures constituting the first series may be added the following:—

Once back and forward, reverse three, and meet.

Once back single, and reverse three, turning at the centre.

Reverse threes.

Once back forward, reverse three, and meet.—The "once back and forward" is skated as before described, which would naturally bring each skater to the centre, left shoulder to left shoulder; but as the reverse 3 has to be taken on the left foot, it is necessary that they should pass right shoulder to right shoulder; and to do this the left foot should be put down and the inside edge taken just before the centre is gained, and in this consists the difficulty of the figure, as it involves a complete alteration of balance. Having made the turn to outside back and again come to the centre, back to back, a 3 is skated on the right, so as to allow the "once back and forward," &c., to be skated on the left foot.

Once back single, and reverse three, turning at the centre.—This is commenced with a once back and a single, which leaves the skater on the inside back, and from this the other foot is put down on the inside forwards, and the centre gained on that edge, when the turn to outside back is effected, on which the skaters run to the centre, or continuing the curve of outside back half the circle, they put down the other foot on the outside forwards, and so to the centre.

Reverse threes.—In this the skaters start, each on the right foot, on the inside forwards, and turn to outside backwards, on which they continue to the centre. As the movement is begun on the inside edge, the skaters pass each other left shoulder to left shoulder, arriving at the centre back to back. To continue the figure on the left foot the inside edge forward has to be taken, and to do this from the outside back of right the body has to be turned the half of the circle, the skaters again passing each other at the centre face to face; and it is this change from the outside back of one foot to the inside forwards of the other which constitutes the difficulty, and imparts to the figure so peculiar an appearance. By varying the combination contained in the first series, and adding a few extra turns, we can make a second series equally pleasing and more difficult.

SKATING CLUB FIGURES: SECOND SERIES.

One turn C.
Two turns C (half-double). (Fig. 120.)
Three turns C (double 3). (Fig. 121.)

Twice back and one turn.
" " two turns.
" " three turns.
" " four turns.
" " five turns (triple 3).
" " six turns.
" " seven turns (double double).
Once back, meet, and two turns. (Fig. 122).
Twice back, meet, and two turns.
" " " three turns.
&c. &c.
Twice back, meet, and forwards.
" " " forward 8.
Once back, two turns, and double. (Fig. 123).
Once back, double back entire. (Fig. 124).
Twice back, " "
Once back, double back, and two turns.
Twice back, " "
Once back, double back, and double.
Twice back, " "
Once back, double back, and forwards.
Twice back, " "
Once back, double back and meet, and double.
Twice back, " " "
&c. &c.

EXPLANATION OF SECOND SERIES.

One turn C "threes."—This is the well-known figure 3, with which the start is always effected, in order that the performers may place themselves in form—a sort of "proving the company" before going into action.

Two turns C "half-double" (Fig. 120).—After making one turn the resulting edge is dwelt upon for a yard or two, and then the second turn made, and the resulting edge of outside forwards continued for a few yards in a curve designed to bring each to the original position occupied by his partner at the start; each skater thus circling about half a circle, as in the "once back and forward." The dwelling on the inside back causes the circling in this figure to be similar to that of the next figure, in spite of the three turns of which it is composed.

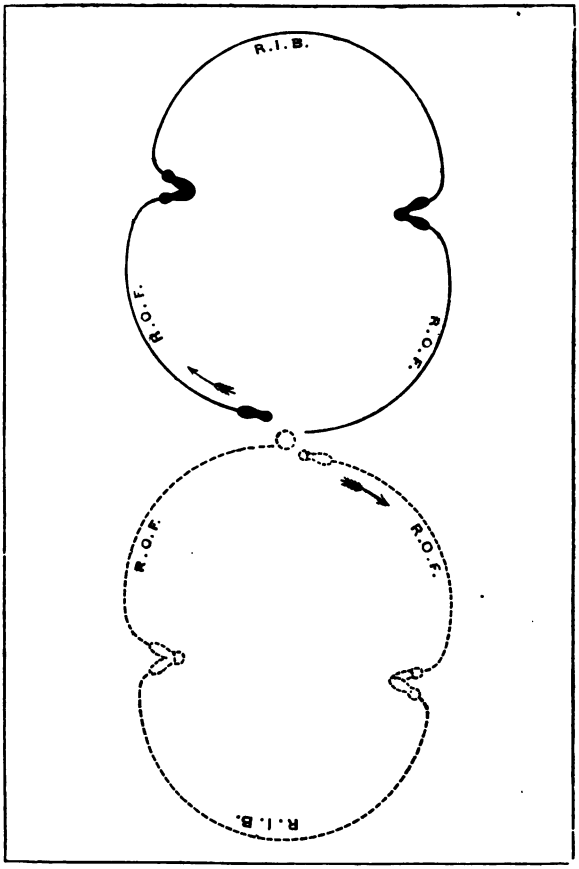

FIG. 120.—Half-Double. (Two Turns.)

Three turns C "double" (Fig. 121).—This is carried out on the same plan. By the third turn the skaters are placed on the inside back, on which each runs home to the original starting-place of the other, on as large a curve as impetus will permit.

Twice back and forward half-double, and other compound turns.—Having skated well out, with the twice back, they should, by means of the forward half-double, get home, each to his original starting-place (the twice back occupying one half of the circle and the half double the other half), on the last curve of outside forward, which has resulted from the second turn. On this last curve they must be sure to dwell long, as *that only is* the test of perfection of balance, and it is in

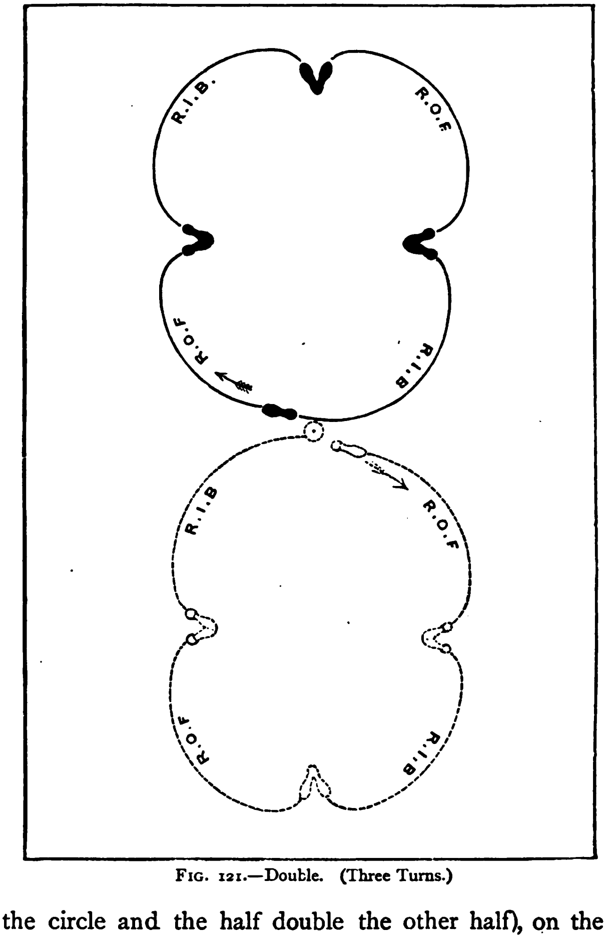

FIG. 121.—Double. (Three Turns.)

the steadiness and accuracy of the skaters after such trying evolutions that the true charm of the art is found.

Once back, meet, and half-double, or two turns, &c. &c. (Fig. 122).—Here they run in on that capital and easy figure, "the back and meet," and then put in some difficulties in the shape of the above two turns, running to the centre on the resulting curve of outside forwards; the circling round the centre will be similar to that of "once back and meet." It may seem that

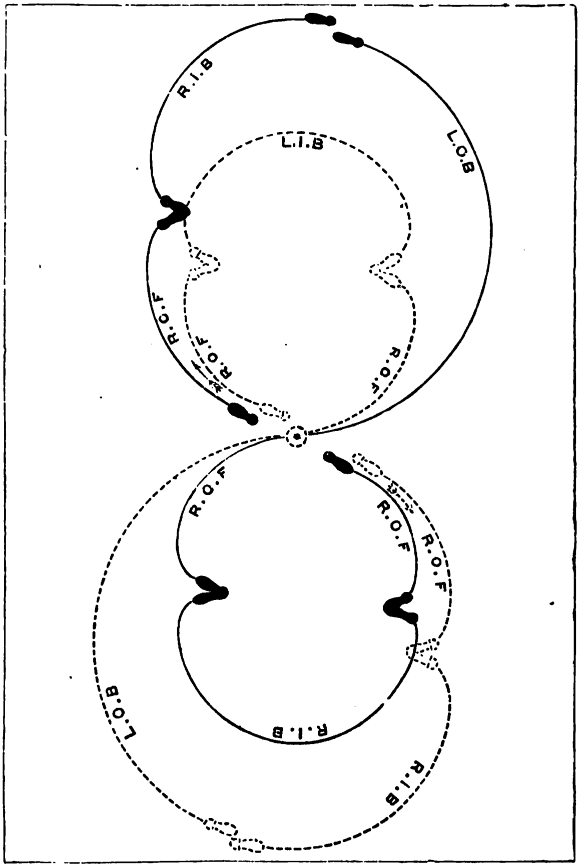

FIG. 122.—Once Back, Meet, and Half-Double, or Two Turns.

this figure is nearly the same as the last, but in practice the meeting in the centre alters the direction of the curves, and causes a new exercise, requiring great self-control.

Twice back, meet, and forwards.—Here, directly the skaters meet back to back on the outside backwards of the left, they strike at once on to the outside forwards of the right foot, and carry out the forward 8 after the same fashion.

Once back, two turns, and double (Fig. 123).—After skating well out with the once back, two turns are put into the curve of outside back which is being described by the left foot, and this being done, the skaters are still on the outside back of the left foot. The right is then put down in the ordinary way of "once back," and a double skated; the last turn leaves them on the inside backwards, and on this edge they run to the centre, and repeat on the other foot. The turns that are here inserted will cause the circling round the centre to be rather greater than in "once back."

Once back, double back, entire (Fig. 124).—After doing once back, a double 3 on right is skated, which leaves the skaters on the inside back of right, when the outside back on left is taken up, and then from it the usual back entire is skated. Here also the turns that are inserted will cause the circling round the centre to be rather greater than in "twice back entire."

Once back, double back, and two turns or forward half double, and *Once back, double back, and double,* will be quite apparent to the reader after the above descriptions.

Once back, double back, and forwards.—This also wants no further explanation.

Once back, double back, and meet, and double, or any compound turns as a termination, will readily be understood.

To the above figures may be added the reverse half-double. It is begun in the same manner as the reverse threes, but is not so difficult as that figure, in consequence of the two turns of the half double restoring the skater to the inside edge, from which it is easy to repeat the half-double on the other leg. The first turn to outside back should be made about a yard and a half from the start, the resulting curve of outside back continued to within about a yard and a half of the centre when the turn to inside forwards which brings the skater to the centre is made, and so skated it becomes easy.

The art of skating the combined figures to perfection can only be accomplished after considerable practice with the same

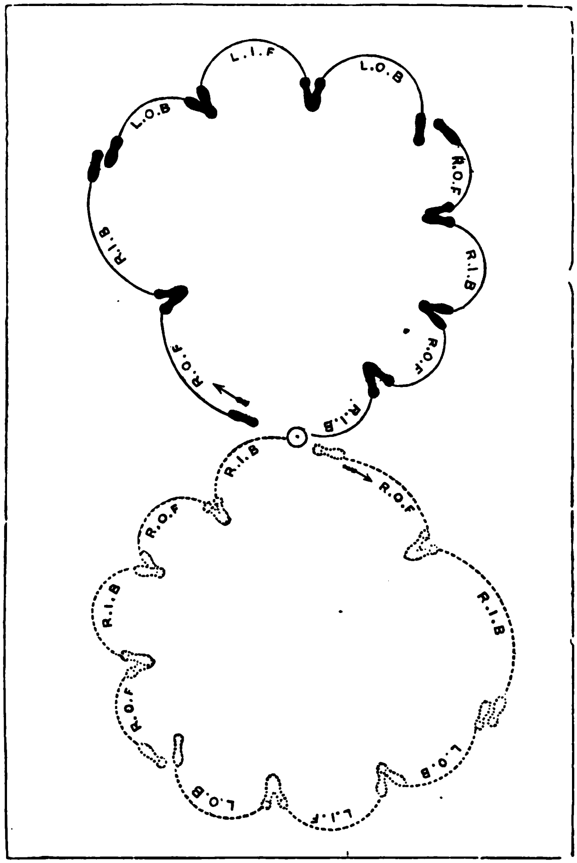

FIG. 123.—Once Back, Two Turns, and Double.

companions, following the well-known law of all concerted art movements.

It ought to consist of large curves, executed with power and grace, combined with perfect steadiness of balance, power of control, quick perception, and judgment of distance; the motive power of the stroke should be disguised and kept silent, though powerful, so that the mere change of movement appears to effect it. One great fault that is usually committed is the endeavour to skate the figures at too great a pace. Another fault is having the feet too far apart when the back is taken after the three. The reason most skaters fall into this fault is *because they fancy* they thus get a more powerful stroke, but

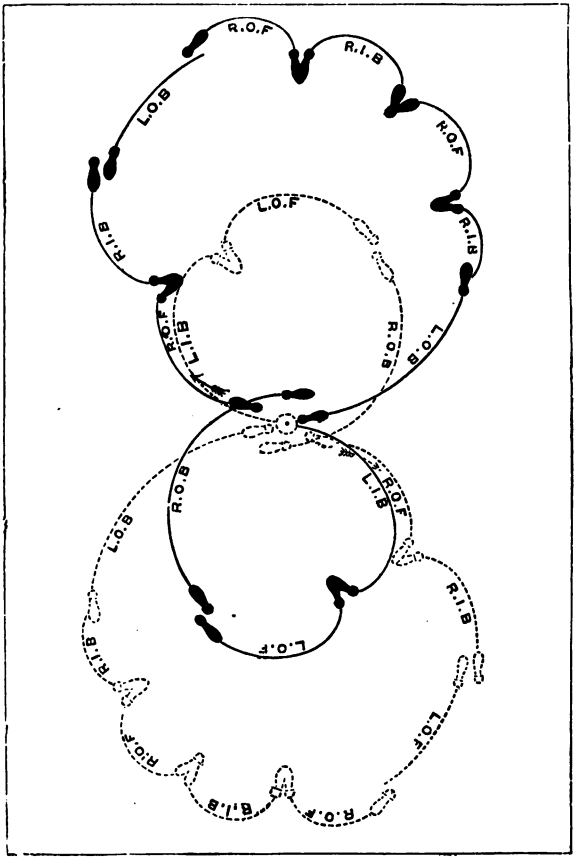

FIG. 124.—Once Back, Double Back, Entire.

this is quite a fallacy, as three times the power can be given to the push off if the feet are close together at the moment of striking, and the skating thus done is very much more elegant.

When such excellent qualities are concentrated upon these combined figures, the result is truly agreeable, not only to the immediate participators in them, but also to the onlookers, who seem never tired of watching the skaters, now receding far from the centre, now approaching it, now apparently sweeping backwards towards inevitable collision, yet avoiding it within an inch without hurry or confusion, now apparently entangled in whirling turns; yet all is order—the weaving of the pattern goes on.

There is an adverse side of the picture: of too crowded ice, and good skaters, who, left to themselves would rarely fall, knocked down half-a-dozen times a day, perhaps placed *hors de combat* for the season, by the ignorant and unskilful. Many a ludicrous scene is caused by a little mistake; for instance, one of the writers once took part in a figure, consisting of five skaters, the figure being the back entire; at the critical moment the first pair came into collision and fell, and the others following quickly upon them, all went down together!

SKATING CLUB FIGURES: THIRD SERIES.

Having laboured for many years at the resuscitation of the serpentine line and the development of the Q's, simple and complex, it has long been our earnest desire to see some of them, at any rate, introduced into combined skating, as they consist of beautiful ever-changing curves and turns, of pure feats of difficult and delicate balancing, carried out in a movement of comparatively long duration, requiring the greatest care and the highest attainments of the skater; in fact, genuine high-class skating. Agreeing with those who to elevate our art have wisely discountenanced and expunged from combined figure-skating all mere tricks, we have always differed from those skaters who would wish to exclude these splendid movements, the ability to skate which, in concert with other skaters, is another step up the ladder of our art.

Happily, the opposition with which the new figures contained in our third series were met is fast passing away. Many rising skaters have learnt them, and have assisted in introducing them into our Club figures.

The following are the new movements alluded to, and they can be inserted at pleasure amongst any of the old.

Once back forward, out and in. (Fig. 125.)
Twice back, ,, ,,
Three times back, ,,
Once back, forward Q (Q C). (Fig. 126.)
Twice back, ,, ,,
Three times back, ,,
Once back, out and in. (Fig. 127.)
Twice back, ,, ,, ,,
Three times back, ,, ,,
Once back, with back Q (Q D).
Twice back, ,, ,,
Three times back, ,,

Once back entire, back one turn, two turns (Fig. 128), or three turns (Turn D).

Twice back entire, back one turn, two turns, or three turns (Turn D).

Three times back entire, back one turn, two turns, or three turns (Turn D).

EXPLANATION.

Once back forward, out and in (Fig. 125) is begun by a Turn C on right, and so on to the outside back of left, and again on to outside forwards of right; on this edge the skaters approach each other, and when almost at the centre a change of edge is effected by altering the inclination to inside forwards (all on the same foot), on which, passing each other, they continue until they arrive home, when they repeat on the left. We designed this figure to make use of the forward serpentine line in combined skating. It is most difficult to execute, as the tendency to curl in after the change to the inside edge has been effected is very great. It is amusing to see how men, *really good* skaters in many respects, are so easily pulled out of their course, and taught humility, by the despised inside edge forwards. The antidote to correct the curl is the sideways attitude, with the unemployed leg behind, and the toe turned out. The circling round the centre is similar to "once back and forward," until the centre is gained, when the change of edge reverses the order of going, and brings each skater to his partner's original starting point.

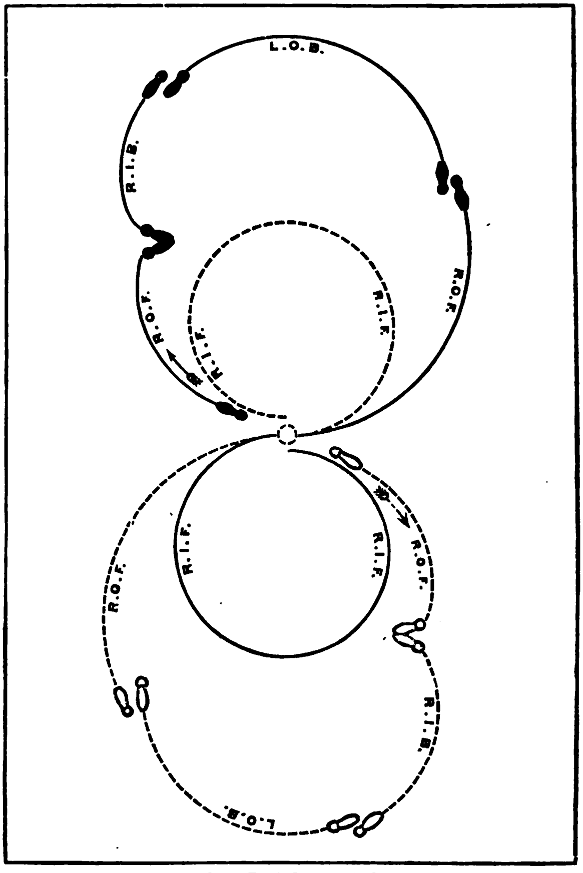

Fig. 125.—Once Back Forward, Out and In.

Twice back forward, out and in; Three times back forward, *out and in.*—These are but extensions of the same figure: and the circling round the centre will be in proportion to the number of movements made use of.

Once back and forward Q (*Q C*), (Fig. 126).—It is begun with a single Turn C on right, to outside back of left, and the old original Q figure (Q C in the list), from the outside forwards of right, the skaters running to the centre on this, changing the edge as in the last figure, and making the turn when each has passed his companion on the inside edge. They will then be on the outside back of right, on which they continue until the centre is gained; but being here right shoulder to right shoulder, a Turn C must be skated before the figure can be repeated on the left, as usual. The relative positions of the skaters when they arrive at the centre will be similar to their positions in "once back forward, out and in." Instead of running to the centre on the last curve of outside back, the words "and in forward" are often used when the other foot is put down and the centre gained on a curve of outside forwards. When more than four are skating a figure it is well to use this way of gaining the centre, as coming to the centre on the outside back (the last curve of the Q) the pace becomes very slow, and the first pair have hardly time to get away from the centre before the second and third pair arrive.

This introduction of the old Q figure into combined skating is not quite so difficult as the former figure of "out and in," in consequence of the skater not being required to stay so long on the inside forwards; nevertheless, the obligation of making the turn at a given point and time, is a nut to crack for many skaters who have been accustomed to do the Q just when the skates like.

Twice back, &c. &c., *Three times back*, &c. &c., are but extensions of the same figure.

Once back, out and in (Fig. 127), is commenced with a single Turn C on right, and so on to outside back of left, on which the skaters run into the centre, and, just previously to the apparently inevitable collision that must ensue, each effects a change of edge by leaning over to the inside back, all being done, of course, on the same foot; each will then pass his companion face to face, and recede from the centre in the most curious manner, and be gradually brought together again by the natural curve of the inside backwards, on which each skater still remains; as they are at the centre, right shoulder to right shoulder, a single Turn C is necessary, so that the figure may be repeated on the left leg. Although in this figure there is one movement less than in "once back and forward out and in," the circling round the centre will be very nearly similar to the circling in that figure.

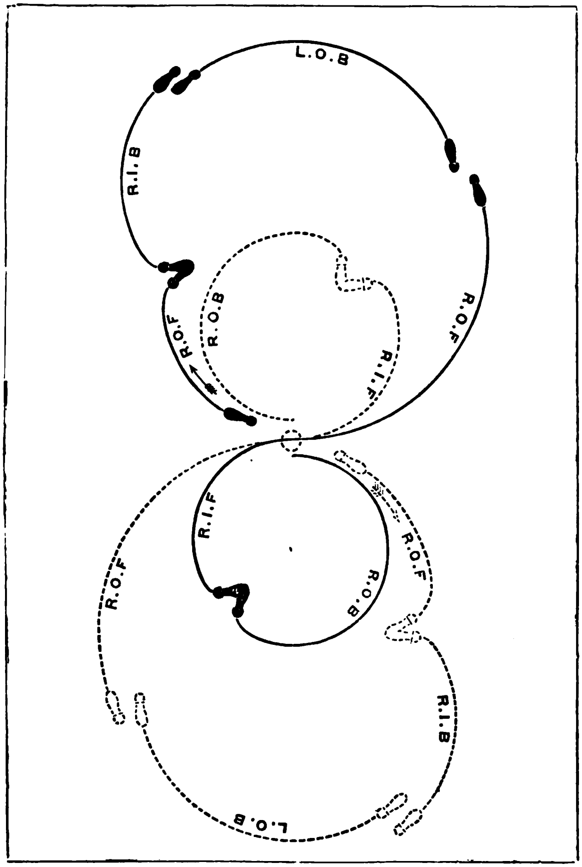

Fig. 126.—Once Back and Forward Q.

This figure was introduced by us into combined skating, as an illustration of the serpentine line backwards, and it has been very much admired, on account of the singular and beautiful effect the above-described receding motion gives it.

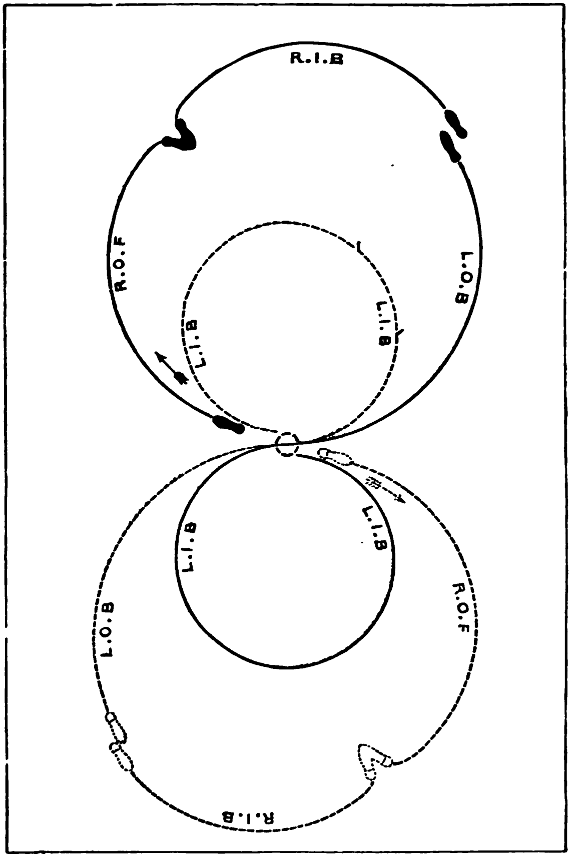

FIG. 127.—Once Back Out and In.

Although very difficult, it is not quite so much so as the forward out and in, as the inside backwards is a shade easier *than that* edge forwards. To guide oneself accurately backwards *upon a changing* edge, must call forth the highest qualities.

Twice back, &c. &c., *Three times back*, &c. &c., are but extensions of the same figure.

Once back, with back Q, is commenced by a single Turn C on the right, and so on to outside back of left, continuing on this edge till the centre is gained, when a change of edge is effected by leaning over to the inside edge; and when the skaters have receded from each other some yards, the turn is made, bringing them on to the outside forwards, which is continued to the centre, and so, still being on the left foot, and right shoulder to right shoulder, a Turn C becomes, as in all these cases, necessary. The circling round the centre is the same as in the last figure.

This figure, which we introduced as an illustration of one of the seven new Q's, was, at the period of its introduction, by far the most difficult feat that had ever been attempted in combined movements.

Twice back, &c. &c., and *Three times back*, &c. &c., are but still more difficult extensions of the last figure. The increased difficulty is caused by the greater impulse that is required to execute the more numerous turns.

Once back entire, back half-double, &c. &c. (Fig. 128).—This is begun by Turn C on right, and so on to the outside back of left, on which the skaters run in as is usual in the back entire; and when each has taken the cross stroke, they execute from it the back Turn D, and so come to the centre on the inside forwards, or (what we think is prettier) a half-double can be done from the cross stroke, and the skaters then come to the centre on the outside back. This is what is illustrated in Fig. 128. The circling round the centre is similar to that of "once back entire."

This figure was introduced by the writers, to make use of the pretty double back turn.

To combine these new movements with the old is very easy; for instance, "Twice back, meet, and forward Q" will suffice as an example.

SKATING CLUB FIGURES: FOURTH SERIES.

Once back forward, in and out.
Twice back ,, ,,

Three times back, forward, in and out.
Once back, single and forward, in and out.
Once back forward, in and out, and Q.
Twice back „ „

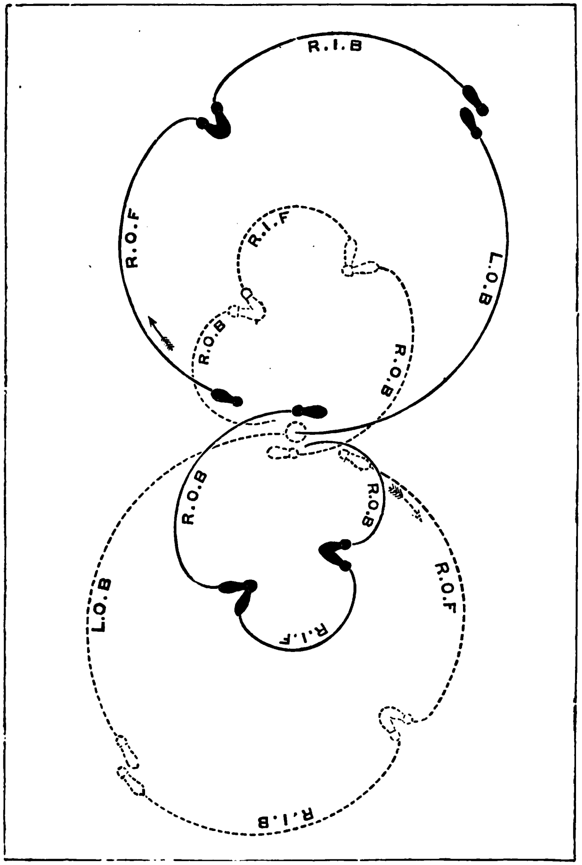

FIG. 128.—Once Back Entire, Back Half-Double.

Three times back, forward, in and out, and Q.
Once back, in and out.
Twice back „ „
Three times back „

Once back, single in and out.
Once back, in and out, and Q.
Twice back „
Three times back „
Once back single, in and out, and Q.

The figures contained in the fourth series are similar in character to those of the third series, as they are made up of the serpentine line; but the order of using the two edges is reversed. Great care should be taken in calling out these figures to let it be distinctly known that an "in and out," and not an "out and in," is intended.

We have thought it unnecessary to give diagrams of the movements in this series, as they are like those of the third series, the edges only being reversed, and will, we think, be readily understood from the written explanation alone.

EXPLANATION OF FOURTH SERIES.

Once back forward in and out is commenced by a Turn C on right, and so on to the outside back of left, and again on to the outside forward of right, as in "once back forward out and in;" but at this point, instead of running to the centre on the outside of right, the left foot is put down on the inside edge, and the curve continued. When almost at the centre, a change is effected by altering the inclination to outside forwards, on which edge the skaters continue until they arrive home; as they are left shoulder to left shoulder, a three is necessary before the figure can be repeated on the left leg. The circling round the centre will, in consequence of the extra curve of inside edge, be the quarter of a circle more than in "once back forward out and in."

Twice back, &c., and *Three times back*, &c., are simply amplifications of the same figure, and the circling round the centre will be in proportion to the number of movements introduced.

Once back single and forward in and out.—This differs from the last figure in this only, that instead of taking the inside of left from the outside of right, a three instead of an outside forwards is skated on right, and then the feet are spread-eagled, and from the inside back of right the inside forward of left is taken. It is the more difficult figure of the two, as the three gives a certain amount of rotation to the body and renders the curve of inside edge on the other leg more difficult.

Once back and forward in and out and Q.—This is commenced by a single Turn C on right, and so on to the outside back of left, when the right is again put down on the outside forward, as in "once back and forward Q," but instead of continuing to the centre on the outside edge of right, the left foot is put down on the inside edge and the curve continued; and when almost at the centre, the change to outside forward is effected, and after some distance has been traversed, the turn to inside back is made, and the centre gained on that edge. A three on the right must here be skated to enable the skaters to repeat the movement on the left foot.

It will be seen that this figure differs from "once back and forward Q" in this respect, that instead of skating the Q (Q C) on the right foot, the left is put down, and the Q (Q A) skated.

We have been obliged to call this figure "once back forward, in and out, and Q" in order to distinguish it from "once back and forward Q," but of course the "in and out" is as much a part of the Q (Q A) as the "out and in" is in Q C. The circling round the centre is similar to that of the last figure.

Twice back, &c., and *Three times back*, &c., are but extensions of the same figure.

Once back, in and out.—This is commenced with a single Turn C on right, and so on to the outside back of left, which curve is continued for some little time, when the right is put down on the back inside edge and the curve continued; and when almost at the centre, a change of edge is effected by altering the inclination to outside, on which edge the skaters continue until they arrive home, meeting back to back, when a three is generally skated on the left. This necessitates another three on the right before the figure can be repeated on the left leg.

This is a very difficult figure in consequence of the great accuracy required, the skaters passing each other at the centre *back to back;* and this figure, "the back in and out and Q," and "once back and pass" described in the Fifth Series, are the only movements in the Skating Club figures, in which the *centre is passed* with the skaters back to back. The circling round the centre will be the quarter of a circle more than in "once back, out and in."

Twice back, &c., and *Three times back*, &c., are but extensions of the same figure.

Once back single, in and out.—In this, after the once back is skated, another single, which must be a large one, is put in, and the centre gained on the tail of the three and the edge changed.

Once back in and out and Q.—This is commenced and carried out as in the "once back in and out," until the skaters have passed at the centre, back to back, and are receding from each other on a curve of outside back, when the turn is effected to inside forwards, and the centre gained on that edge.

Arriving at the centre on the inside edge, a reverse three on the other foot, meet, and three, serve prettily for alternating the feet, so that the movement may be repeated on the other leg. The circling round the centre is similar to that of "once back in and out."

Twice back, &c., and *Three times back*, &c., are but expansions of the same figure.

Once back single in and out and Q is similar to "once back single in and out," with the addition of the turn which completes the Q.

SKATING CLUB FIGURES: FIFTH SERIES.

The changes of edge made use of in the third and fourth series have suggested a new series of combined movements made up of the serpentine line; and from the curious manner in which the skaters recede from and advance towards the centre by a simple change of edge, we have christened them "the Boomerang figures."

The new movements are six in number, and their peculiarity is that they are all done *outwards from the centre.* There is nothing new in the ingredients of which they are composed, being simply changes of edge and turns that have been made use of in the old figures, so that any one able to take part in the former series can without difficulty master the movements we are about to describe.

The words of command are as follows:—

Forward out and in outwards. (Fig. 129.)
Once back out and in outwards. (Fig. 130.)
Forward Q outwards. (Fig. 131.)
Once back and Q outwards. (Fig. 132.)
Forward reverse Q outwards. (Fig. 133.)
Forward reverse Q and forwards outwards. (Fig. 134.)

EXPLANATION.

Forward out and in outwards (Fig. 129).—This is commenced by a bold curve of outside forwards of some five or six yards, when the edge is changed to inside forwards, bringing the skaters face to face, but at a considerable distance from the centre, when the left leg is put down, and a curve thereon of outside described to the centre. As the last curve to place has been made with the left foot, the right is again ready for action, and in order to alternate the feet the next figure (Fig. 130) is skated.

Once back out and in outwards (Fig. 130).—This is commenced as in the old figure of once back, by a 3 when the left foot is put down, and a curve of outside back described for some distance; a change of edge to the inside back is then effected, the skaters while on both curves being face to face, but, as in the last figure, at a considerable distance from each other, and from the centre. Having almost completed the circle of inside back, the right is put down and a curve of outside forward skated to the centre. The last curve to place being on the right, the left leg is now available to repeat "forward out and in outwards" (Fig. 129) on that foot.

The "once back out and in outwards" is one of the most charming figures possible to skate. While on the outside back, the skater recedes from the centre and from his partner, to a distance that seems to preclude his ever coming back again; but no sooner is the change effected than the skaters begin to advance again towards each other. Two or three things must be strictly attended to in skating this figure. First, it is necessary *in* this more than in any other figure for each skater to *watch his partner*, so that the changes of edge be effected at the same moment. Secondly, the curve of inside edge must be ***dwelt on*** and nearly completed as a circle, before the curve of outside forwards to place is commenced. This dwelling on

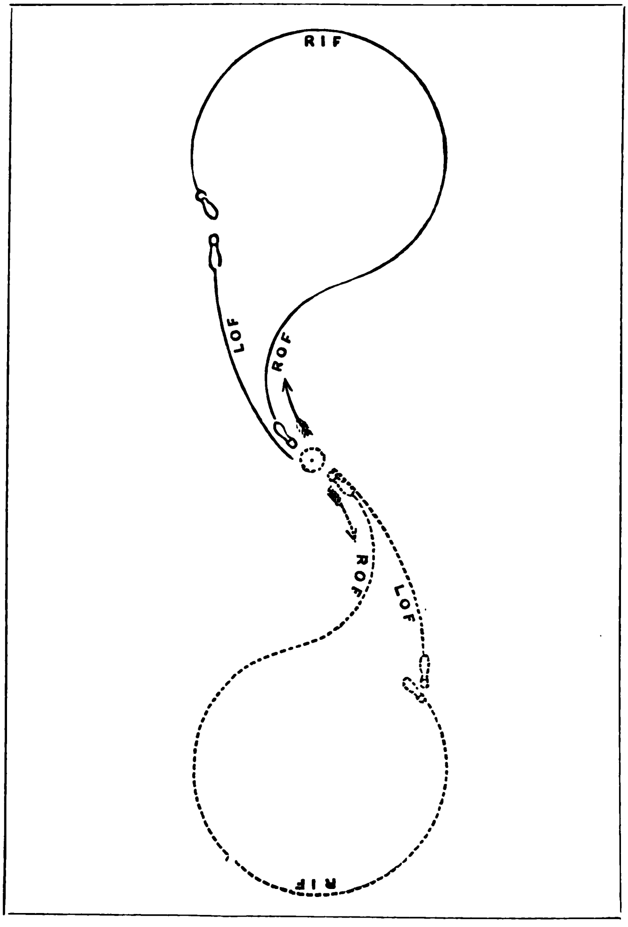

FIG. 129.—Forward Out and In Outwards.

the curve of inside edge is the more necessary if three or four couples are skating, as it is the only means of keeping the figure square.

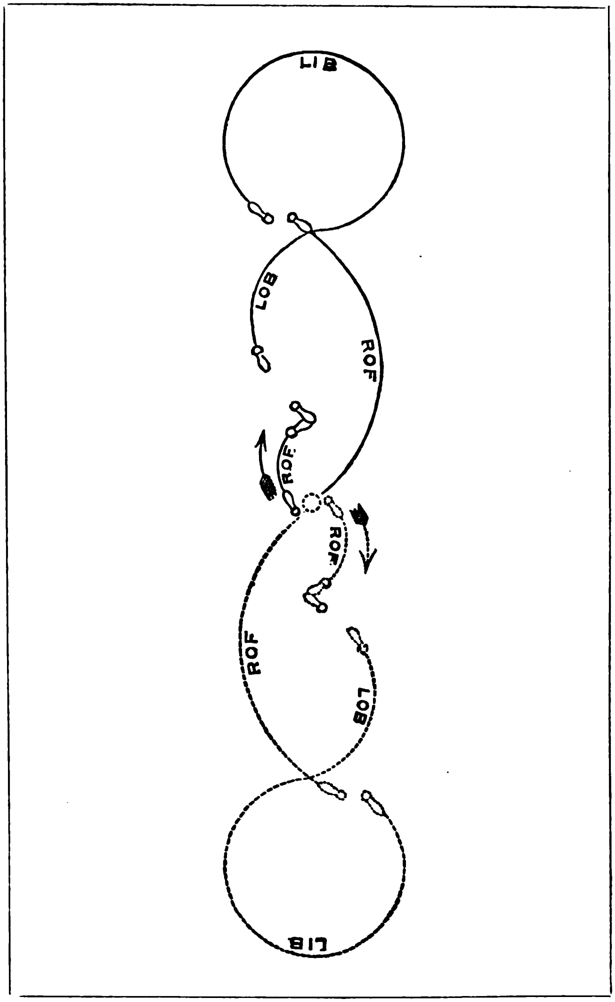

FIG. 130—Once Back Out and In Outwards.

Forward Q outwards (Fig. 131).—This is commenced as "forward out and in outwards," and only differs from it in [illegible]his, that instead of continuing the curve of inside forward [illegible] *as to form* almost a complete circle, a turn to outside back is made, being in fact a forward Q skated away from the centre instead of towards it. It is an easier figure to perform than the "forward out and in outwards," as the turn to outside back relieves the skater from the strain of continuing a long curve on the difficult inside forwards. It is a greater favourite for this reason, and as a rule it looks better, in consequence of the few men who are able to continue the curve of inside forwards, without the effort to do so becoming

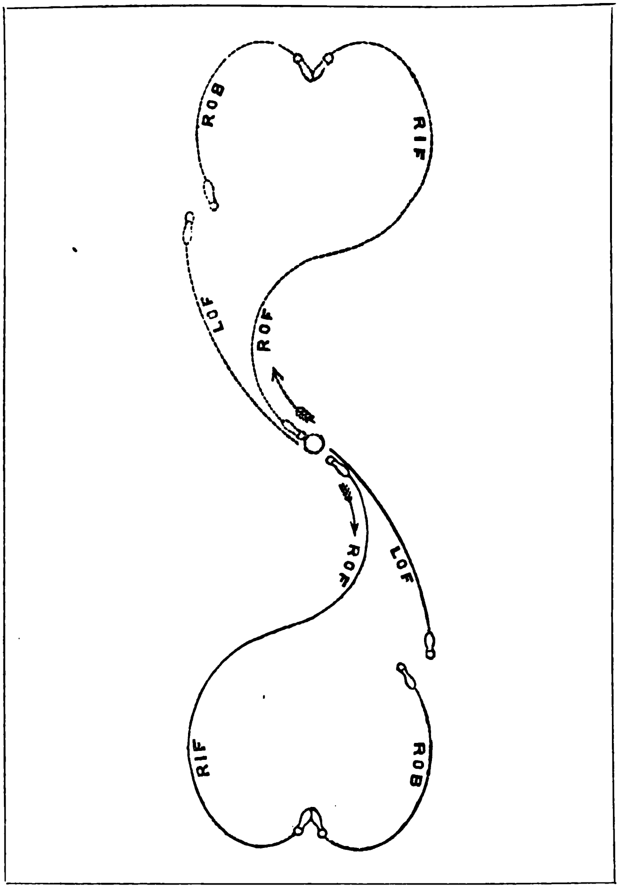

FIG. 131.—Forward Q Outwards.

painfully apparent. As in Fig. 129, the figure is completed by a forward curve of outside edge, on the left leg; and in order to alternate the feet, Fig. 132 should be skated.

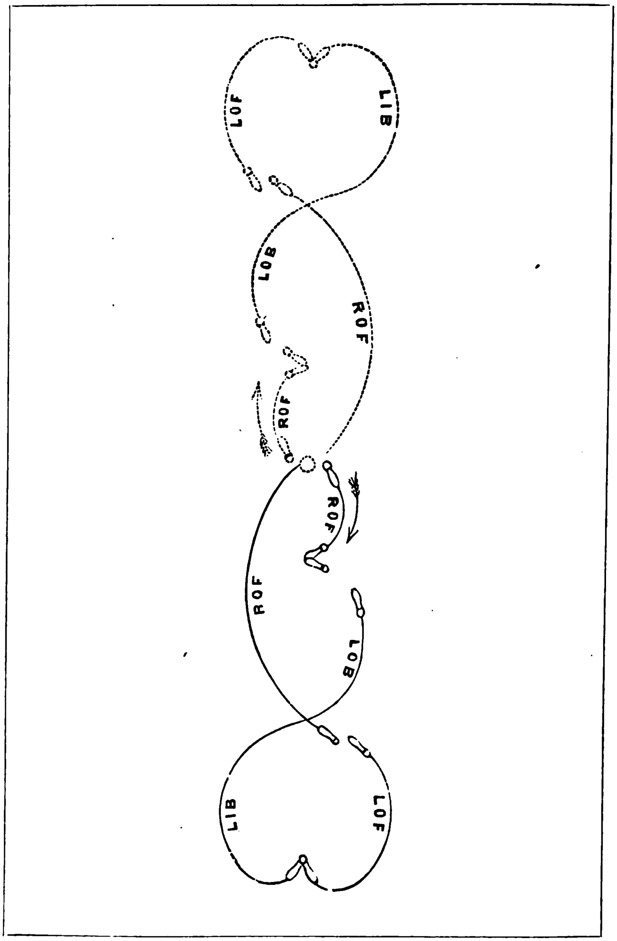

FIG. 132.—Once Back and Q Outwards.

Once back and Q outwards (Fig. 132).—This again only [illegible] *from* "once back out and in outwards" by adding to the curve of inside back a turn to outside forwards. We need hardly say that this is the difficult turn that occurs in the second change of the forward half-double. Great care should be taken to get well on the heel of the skate at the moment the turn is being made, and it is permissible to bring forward, for the instant, the unemployed leg. This bringing forward of the unemployed leg assists the skater in throwing the weight of the body on the heel of the skate at the moment of making the turn. Having come on the outside forward, the unemployed leg should be carried back; the curve of outside forward will thus be rendered larger and bolder.

The figure is completed by a curve of outside forward on the right foot, when the "forward Q outwards" (Fig. 131) can be proceeded with on the left foot, and so on.

Forward reverse Q outwards (Fig. 133).—In the foregoing figures, commencing with the right leg, the skaters have always, in starting, passed each other right shoulder to right shoulder, and this will always be the case when the figure is commenced with a curve of outside edge forwards. When commencing with a curve of inside edge forwards, the skaters must pass each other in starting, left shoulder to left shoulder. We find in practice that it is easier to go from the inside of the right to the inside of the left foot and *vice versâ*, than from the outside of the right to the inside of the left and *vice versâ*. As the figure we are now describing commences with a curve of inside forwards, the first figure in the third series, viz., "once back forward out and in" (Fig. 125) may, as an introduction to it, be skated on the left leg; and this brings the skaters to the centre on a curve of inside forwards on the left foot. On the command "Forward reverse Q outwards" being given, the skaters pass each other left shoulder to left shoulder on a curve of inside edge on the right foot, and, having made a turn to right outside back, they continue the curve for some little distance, when the change of edge to inside back is effected, and the circle on this edge almost completed, the centre being subsequently attained on a curve of left outside forward. If on reaching the centre the old figure of "once back forward out and in" be skated on the right, the performers will be in a position to renew the figure "forward reverse Q outwards" on the left leg. As the position of left shoulder to left shoulder in these reverse figures is an unusual one, care should be taken by the man giving the word of command to signify his intention of doing the reverse figure some little time before he arrives at the centre on the circle of inside forward of the "once back and forward out and in."

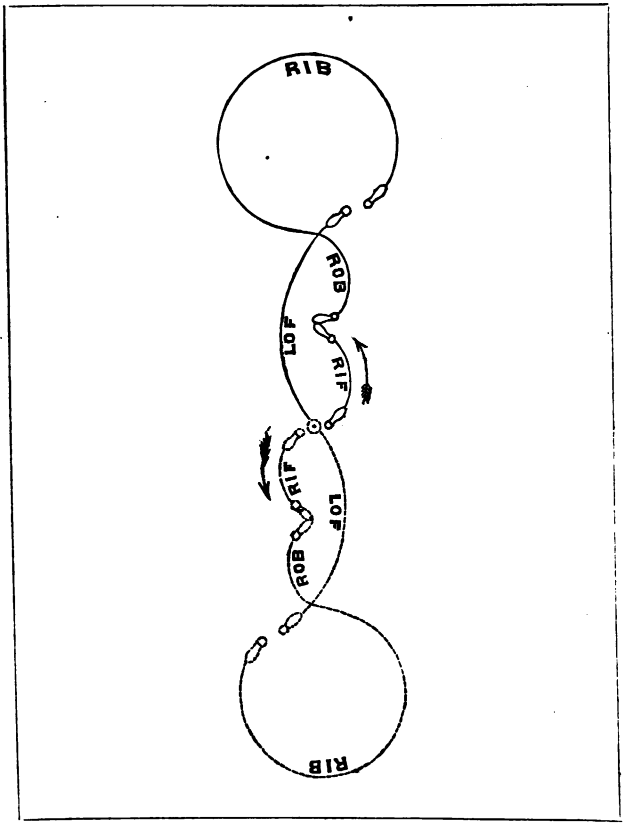

FIG. 133.—Forward Reverse Q Outwards.

Forward reverse Q and forwards outwards (Fig. 134).—*This is very similar* to the last, except that it has the difficult turn from inside back to outside forwards. It should be alternated, as in the other figure, by "once back forward out and in," or by any other method that may bring the skaters to the centre on a curve of inside with the right leg; for instance, when the curve of left outside forward to place (by which the centre is gained in all these figures) has been completed, a curve of outside edge with the right can be skated from the cross, and the change of edge effected either outwards or at the centre, according to the fancy of the man giving the word of command, when the left foot will be in position to renew the figure.

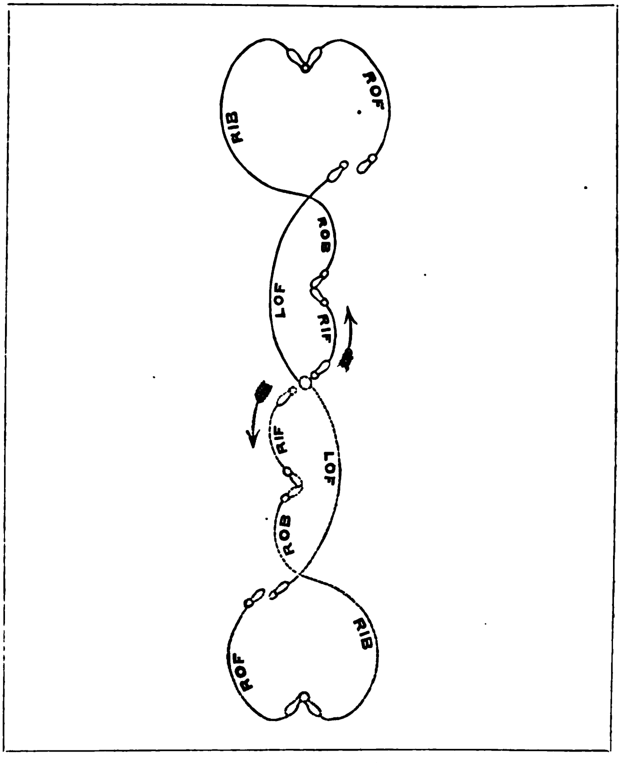

FIG. 134.—Forward Reverse Q and Forwards Outwards.

The above-described figures have this great advantage, that, the difficult changes of edge being done away from the centre, the skating of them is rendered more easy to the three or four couples taking part in the figure than it would be if the changes were made at the centre; because, from the nature of the various curves, each skater can look at his partner during the whole movement, and so time the various changes to a nicety.

To the above figures may be added the following:—

Forward and double outwards.
Once back and half double outwards.
Once back and forward pass and double outwards.
Once back and pass entire and half-double outwards.
Forward and reverse Q outwards.
Half-double and reverse Q outwards.
Double and reverse Q outwards.
Once back entire and half-double outwards, Q in turning at the centre.

Forward and double outwards.—Each skater starts from the centre on a curve of outside edge, going round the centre the quarter of the circle, when the left is crossed over, as in the forward cross roll, and a double 3 skated on it. This completed, the right is put down and the centre gained on a curve of outside edge.

Once back and half-double outwards is now usually skated as follows:—Starting with the left foot, which is now available from having run to the centre in the last movement on the right, "once back" is skated, continuing on the back outside edge the quarter of the circle, when the left is crossed over behind as in the back entire, and a half-double skated on it and the centre gained on an outside forwards of the right. The "forward and double outwards" may now be repeated starting on the left foot, and this finished, the "once back and half double outwards" can be repeated on the right. The forward curve of outside in "forward and double outwards," as well as the back curve in "once back and half-double outwards" should be made with such curvature as to bring the skaters to within about two yards of the centre, because the double and half-double take them from the centre; and unless this curvature be made, one stroke of outside is barely sufficient to bring the skaters back to the centre.

These two figures form a pretty combination, alternating the feet, and are not difficult, as the double and half-double come easily in consequence of the rotation being reversed.

Once back forward, pass, and double outwards.—This is similar to the "once back and forwards," but instead of, as in that figure, stopping at the centre, the skaters pass each other at the centre as close together as possible, and continue the curve for some distance, when the other foot is crossed over and the double skated, the centre being gained by a curve of outside forwards on the other foot; a three is now necessary to alternate the feet, when the movement may be repeated, starting with the left foot.

Once back, pass entire, and half-double outwards.—This figure is similar to "once back and meet," but instead of meeting, the skaters pass each other as close as possible, back to back, at the centre, and when the curve has been continued some distance the feet are crossed, as in the "back entire," and the half-double skated, and the centre gained by a forward outside curve on the other foot. These pass figures were skated in the Club thirty years ago, but then the skaters simply came round to the centre on the outside edges, and consequently from the long sustained curve requisite almost all impetus was lost; but by adding the double forwards and half-double backward new impetus is acquired.

Forward and reverse Q outwards.—The name of the figure is too similar to "forward reverse Q outwards," but there seems no help for it. Stress must be laid on the word "and" in giving the word of command. It is begun by a curve of outside forwards, say on the right, which is continued for a quarter of the circle, when the left is put down on the inside edge, on which another quarter of the circle is skated, when the change is made to outside forwards and the turn to inside back (Q A), the centre being gained by a curve of outside edge forward on the right—when the skaters can repeat the movement starting with the left foot.

Half-double, and reverse Q outwards.—This is begun by striking from the centre with the half-double, say with the right foot, when the left is put down on the inside edge and the reverse Q (Q A), as in the last figure skated.

Double, and reverse Q outwards.—This differs from the last only in this, that a double instead of a half-double is skated at the beginning. It is more difficult, inasmuch as the inside forwards, which begins the reverse Q with the left foot, has to be taken from the inside back of the right.

Once back entire, and half-double outwards, Q in turning at the centre.—The "once back entire, and half-double outwards" will be readily understood, being the same movement described at page 247, except that it is done outwards instead of to the centre. The "Q in turning at the centre" will also be understood, as it is the simple Q (Q C), but the change of edge instead of being, as is usual, at the centre, is made before the centre is reached, and the turn is made at the centre. The "Q in turning at the centre" may be used instead of the usual curve of outside edge in coming to the centre in all the "outwards" figures; but great judgment is requisite in making the curves of outside and inside edge, which precede the turn, so as to get the turn correctly at the centre.

The above new figures are now recognised as part and parcel of the Club figures, but the following, although skated by a few of the members, have not become so popular, possibly in consequence of the difficulty of skating them. They are

Forward and Mohawk entire. (Fig. 135.)[1]

Serpentine and Mohawk. (Fig. 136.)

Forward inside Mohawk and half-double. (Fig. 137.)

Forward and Mohawk entire is begun by both skaters passing the centre, right shoulder to right shoulder, on a curve of outside forward, and when half a circle has been skated the feet are spread-eagled and the left foot passed in rear of the right and put down on a curve of outside back, on which the centre is gained when the right foot is crossed over, as in the "back entire." When this curve has been sustained some little distance the left is put down on a curve of outside forwards and a half circle completed. The feet are now again spread-eagled and the right put down on a curve of outside back, which is continued to the centre, and so on.

Serpentine and Mohawk (Fig. 136) is a figure that may be begun by any of the "outwards" movements which place the skater in such a position as enables him to take a forward inside edge when at the circumference of the circle. For instance, "forward out and in outwards" on the left may be supplemented by "Serpentine and Mohawk in." The skaters in this case after the "forward out and in outwards," instead of running to the centre on a curve of outside forward with the right foot, skate a curve of inside forwards and effect a change of edge, arriving at the centre face to face, when the feet are spread-eagled and the left passed in rear of the right and put down on a curve of outside back, which, continued half a circle, is changed to inside back, and when half the circle is completed the right may be put down on the inside forward and the "Serpentine and Mohawk" repeated.

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[1] In Figs. 135, 136, and 137, the movements of one skater only are shown; the circle and dot represents the centre.

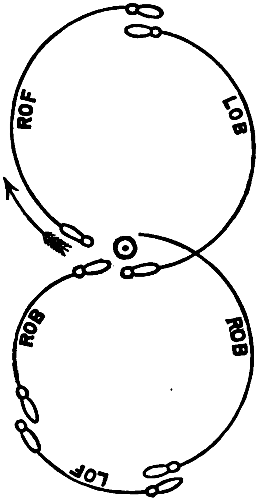

FIG. 135.
Forward and Mohawk Entire.

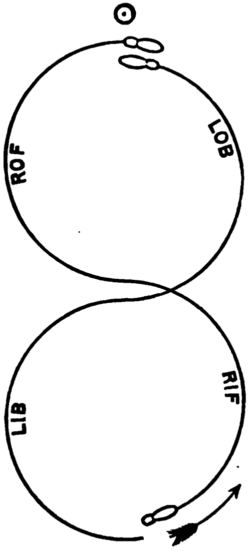

FIG. 136.
Serpentine and Mohawk.

The figure is a very difficult one, but when well skated has a very peculiar effect in consequence of the skaters advancing to and receding from the centre while facing each other the whole time.

Forward inside Mohawk and half-double. (Fig. 137.)

This figure was suggested by a member of the Skating Club (Mr. G. B. Longstaff) in a letter he wrote to the *Field* last year. In that he says—"A description of the following figure may interest those of your readers who are anxious to introduce as many variations as practicable into combined skating. It is founded on a well-known movement, I fancy of Canadian origin, but which has not hitherto, so far as I am aware, been introduced into 'The Figures.' Starting on the outside edge forwards on the right, after proceeding for two or three yards the left foot is set down behind the right (which is at the same moment taken up), but upon the inside edge forwards; this is sustained for two or three yards, when the feet are to some extent 'spread-eagled,' and the inside edge backwards taken up with the right foot, while the left leaves the ice almost simultaneously (most skaters at this point keep both feet upon the ice in the spread-eagle position, but the effect is then not nearly

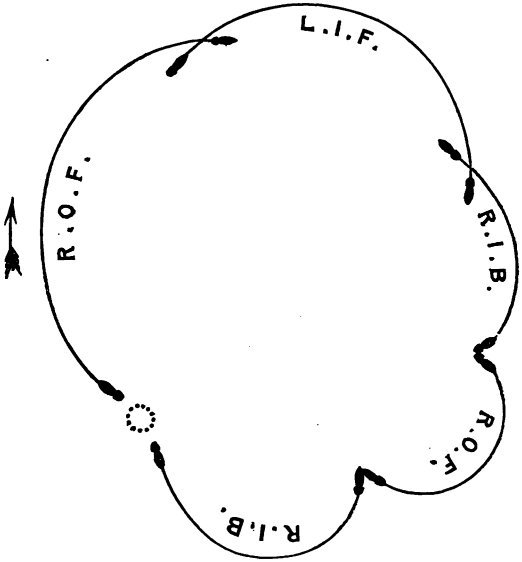

FIG. 137.—Forward Inside Mohawk and Half-double.

so pretty). It will be found that after this second change of feet the skater is left upon the inside backwards, with a security of edge and correctness of attitude that is at once unusual and very pleasant. The centre may be gained on this edge, and the figure then repeated on the left foot, or, as I prefer, one or, better, two turns may be taken from the inside backwards; the balance being so good, these turns come with surprising ease. The changes of feet should be made as quickly as possible, and all 'scrape' carefully avoided, which is easily done with a little practice, and the result is very effective. I have not as yet actually skated this figure with a partner, but find no difficulty whatever in returning to the centre and taking off with the other foot, and it admits of being skated almost any size. At the changes of feet the cuts upon the ice are seen to cross one another; the figure is in fact one of the 'Mohawk' class."

The first two changes are very difficult to follow when first seen, and to most men the second change from left inside forward to right inside back presents considerable difficulty, but the figure, as a Club figure, is quite skateable, and as Mr. Longstaff remarks, the turns come with great ease and facility.

CHAPTER XV.

SPREAD-EAGLES AND TOE STEPS.

WE have classed these two-footed movements together simply because they *are* two-footed, and not because they have anything else in common.

The spread-eagle is a very old figure and was once a favourite with our ancestors, but until the last few years it has greatly gone out of fashion.

Many skaters, having a difficulty in turning out their toes sufficiently to get into the required position, would not take the trouble of acquiring it, believing the statement of most writers on skating matters that "it led to nothing."

Again, it was frequently done with bent knees and no variation from the straight line made by means of a curve on the outside or inside edges; but even in its old dress, when done with boldness and dash, it was a very effective figure.

Within the last few years we have discovered that it should not be condemned because it "leads to nothing," as by its agency we can get from a curve of outside edge forwards, performed by one foot, to a similar curve of outside edge backwards on the other, thus changing the direction of going without the intervention of a turn.

A great many skaters declare that they are so formed that it amounts to an impossibility for them to get the toes sufficiently turned out so as to perform the spread-eagle, and this may be the case with some few; but we have no hesitation in saying, that any youth, say from sixteen to twenty-five years of age, can attain the position by standing for some time every day with his heels together and his toes turned out to more than a straight line.

We have heard that an American, who subsequently became a professional skater, was in the habit (being unable naturally to turn out his toes sufficiently) of standing for several hours a day in stocks which fastened his feet in the required position, by which means he was after a time able to perform the spread-eagle with facility. Without wishing any of our readers to go through this martyrdom, we consider that any one who can master the spread-eagle has a wide field of practice open to him.

The straightened knee is as necessary to impart grace to the spread-eagle as it is to any other figure, but the straightening of the knee renders the acquisition of the necessary position more difficult, and can only be acquired by long practice.

The best method of obtaining impetus is by the ordinary run forward; the feet are then placed in a direct line, the heels close together and the toes turned in opposite directions. Assuming the body to be erect, and the skater able to hold his feet in this position, he can proceed in a straight line on the flat of the skate; being on the flat, and so having no "bite" of the ice, as when on a curve of either outside or inside edge, it is necessary that the feet be kept in position by muscular exertion alone. It is quite possible to finish the movement by slowly drawing one foot in front of the other in a straight line, so that the toes instead of the heels are facing each other. There are doubtless but few skaters who will be able to accomplish this, and although very wonderful to behold, it is not graceful, as the doing it necessitates the bending of the knee.

By leaning slightly forward when the feet are in spread-eagle position, the skater will be thrown on to the inside edge, and a curve instead of a straight line will be the result; in this case the feet will not of course be quite in a straight line. By turning the toes backwards past the straight line, at the same time leaning backwards, a curve on the outside edge can be attained; and the serpentine line formed by the combination of the outside and inside curves, spread-eagle fashion, is very pretty, and is known in America as the "Spread-eagle Wave."

A species of striking while in spread-eagle position can be effected so as to render the movement self-sustaining. On the inside edge it is not so very difficult of accomplishment, although requiring long practice before it is attained; but striking while on the outside edge (*i.e.* with the back of the skater to the centre) will test the powers of the spread-eagle skater to the utmost. It should be the aim of the skater to conceal the stroke, which appears, in an expert, to be derived from the muscles of the knees.

As a means of changing direction the spread-eagle is most useful, and when so used can hardly be called a two-footed figure. For instance: suppose a skater to be proceeding on a curve of right outside forwards; by spread-eagling the feet and passing the left foot in rear of the right, and placing it down on the outside back, at the same time taking up the right foot, the direction of going is changed without the intervention of a turn. The change is instantaneous, and the spread-eagling of the feet hardly perceptible to an onlooker.

Again, the change from the outside back of one foot to the outside forwards of the other can be effected in the same manner.

The similar changes from the inside edge are of course much easier, as they do not necessitate the turning out of the toes to the same extent.

We now come to the figures known as "Toe steps," which are of American or Canadian origin, and as we must confess ourselves profoundly ignorant of the movements, we borrow the description of them from an American work on skating, by Messrs. Swift and Clark, called "The Skater's Text-book." The only thing that can, we think, be said in their favour is that they are excessively curious.

"TOE STEPS.

"Of these movements there are really only twelve distinct ones, namely, six on each foot; but the combinations and complications of these are almost innumerable.

"In explaining the toe steps we will always suppose the left foot to be the pivot or centre around which the other foot is to circle, but the skater must be able to do this on either foot.

"1. *The simple toe step forwards.*—Start on the inside of the right foot, placing the pivot toe on the ice about two feet from the circling foot, and inclining the body slightly to the inside; go around the pivot toe, be sure to make a complete circle as in Fig. 138, and in all toe steps make the circle complete.

"2. *The simple toe step backwards.*—Start on the inside edge backwards, placing the pivot toe the same as in the last movement, going round backwards instead of forwards.

"3. *The outside edge toe step forwards.*—Start *slowly* on the outside edge, and cross the pivot foot over behind as far as possible, placing it on the ice and circling around it to the right.

"4. *The outside edge toe step forwards, foot in front.*—Start the same as in the last movement, but instead of crossing the foot over behind, cross it in front and circle round to the right.

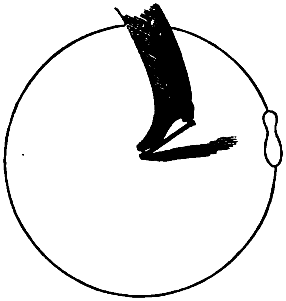

FIG. 138.

"5. *The outside edge toe step backwards, foot in front.*—Start on the outside edge backwards, and cross the pivot foot over in front, placing the pivot toe on the ice, *as far over as possible*, and circle round it on the outside edge.

"6. *The outside edge toe step backwards, foot behind.*—This is done the same as the last movement, with the exception of crossing the pivot foot over behind instead of in front.

"In all toe steps, as in almost every other movement, the head and shoulders should be turned in the direction in which you wish to go.

"7. *Combination toe steps.*—The combination of toe movements are almost innumerable, and must be left to the taste of the skater to form the combinations to suit his fancy. One of these combinations may be formed thus. Start with toe step No. 1, turning it into No. 5; then to No. 2, finishing it with No. 3; always remembering to make the complete circle in each step.

"All the toe steps may be skated in combination by two persons. As skaters will probably introduce into these combinations the toe steps with which they are most familiar, or those which may please their fancy, we give only one as an example.

"Two skaters join right hands, facing each other, and start on plain inside edge toe steps left foot forward. Placing the two pivot toes as near together as possible, make the left foot describe a complete circle. Next do the outside edge toe step forward, left foot behind, making a complete circle. Join hands again, and repeat the same movement."

It is hardly necessary to point out to our readers that in order to accomplish these "toe steps" the skater must be provided with little points at the toe, to enable him to hold the ice, and thus form the pivot.

The manner of skating in performing "toe steps" is so utterly opposed to our English ideas of what is graceful in skating, that we doubt whether the toe steps will ever be popular in this country.

CHAPTER XVI.

THE LADIES' CHAPTER.

WE can scarcely imagine a more delightful, exhilarating, and health-giving exercise for ladies in winter-time than skating. They should and do participate equally with ourselves in the indescribable charm of a fine fresh frosty morning, the roads as hard as adamant, and ringing to the sound of horses' hoofs and carriage-wheels; the windows feathered and obscured with lovely crystals, so that it is only after the eager boys have breathed upon a little spot with great energy that Paterfamilias gets a sight of the favourite thermometer, and finds that the mercury bids fair to forsake the tube altogether, and take up its residence entirely in the bulb. Every blade of grass on the lawn, too, covered with its coating of white glassy dust, or the graceful trees bending their slender branches with the weight of a heavy rime, placed there in an enchanting manner in the night, by Nature's magic hand.

Since the introduction, some five years ago, of roller-skating, ladies have made great progress in the art; and as no better means of acquiring skill in ice-skating exists than practice on the roller-skates, we refer our fair friends to the chapter on Roller-Skating, feeling convinced that any lady who will take the trouble to acquire such skill as may be learned by attending to the directions there given, will easily master the same movements on ice.

We divide our fair friends into two classes: those whose temperament is naturally timid, and whose physical powers are a little under the usual standard (and in which class we include those with weak ankles), and those who are courageous and strong. The former class will probably require artificial support to enable them to learn.

By far the most agreeable and best aid, is for the young lady to be supported by the hands sideways; the person giving the aid should stand on the left of the lady to be assisted and cross hands, the right being underneath.

For the second class of our fair skaters, namely, those whose temperament is ardent, and whose courage and ankles are strong, we earnestly recommend the putting aside of all support. Such hosts of directions are showered down upon the unfortunate beginner, that it is no wonder if she inwardly exclaims, on finding the impossibility of carrying them out, "Save me from my friends "

The inside edge is on the left of the right skate, and the right of the left skate. The outside edge is on the right of the right skate, and the left of the left skate, whether the motion is in a forward or backward direction.

With reference to the form of skate fastening, and which is the best, it will probably be found that opinions on the subject differ amongst ladies quite as much as amongst gentlemen.

The Mount Charles Skate is perhaps as good as any (see Fig. 9); but if this be adopted the boots must be moderately stout in the soles, and the heels should be low and straight, that is, not as is the fashion, inclined inwards towards the middle of the foot. Messrs. Thornhill and Co. of New Bond Street make a skate that is very light and elegant, and which seems to be well adapted for ladies (Fig. 10 on our list). The foot stock is composed of thin steel with side clamps, into which the boot is thrust; at the heel is a flange corresponding to the heel of the boot, and at the back of the heel there is a screw which goes through the heel flange into the heel and holds all secure.

A foot stock something similar to the above is made by Mr. McCormick, an American manufacturer, but it has the advantage of being stamped out of sheet steel, so there is no brazing, and it is modelled to the shape of the boots. It also has adjustable clamps at the toe, so that it can be fitted to any *boot.* The heel is provided with a strap; but if this is objected *to, the skate* can be fastened by a screw as are Messrs.

Thornhill's. Messrs. Thornhill propose getting some of these foot-boards from America and fitting irons to them, so that next year they will probably be able to supply these skates.

In learning simple straightforward or backward skating on the inside edge, we can hardly expect ladies to do otherwise than hold themselves in the position known as full front. But when they have learnt thus to skate forwards and backwards in a straight direction with tolerable ease, we advise them to adopt a semi-sideways attitude, which they will find fully detailed at page 112, *et seq.* In taking a stroke the knees are bent; but whenever the fair skater is balancing and travelling on one foot, the knee belonging to that foot must be immediately straightened and kept quite stiff, as this causes rigidity of the ankle also; and the carriage of the body must be erect, to perfectly ensure which, it is necessary that the other leg and foot, not at the moment in use, be approximated as near to the one on which the skater is balanced as possible without dragging the skate on the ice; the knee of this leg ought also to be very nearly straight, the toe slightly pointed down; the foot may be turned out, or simply removed a little behind the other.

These are two fundamental rules, without the observance of which, our fair pupils may make up their minds at once that they will never skate in good form, or carry out some portion, at least, of the art of figure-skating, with ease, comfort, and ability.

The position of the arms is most important also. With the early efforts of the skater they are sure to be swung somewhat wildly about, in order to gain the balance. Afterwards they become more under control; and when the balance is attained, they ought to settle down at once into the following positions: the one corresponding to and bearing the same name as the foot on which the fair skater is balanced and travelling should be elevated, but not quite to the horizontal position, and the elbow should be slightly bent; the other should hang down nearly straight, and nearly touching the body.

Every alternate stroke will require an alteration of the attitude, to correspond with the leg and foot in use.

As a prelude to the acquisition of the double serpentine we purpose to instruct the fair skater in a two-footed movement in a forward and backward direction, the peculiarity of which is that both feet are always on the ice the whole time, affording great stability, whilst it is undoubtedly the easiest feat in skating, as there is no striking out.

Let the two feet be placed close together, and the knees and ankles inclined rather inwards, and with the inside edge of the right foot make a curve with it round the left, bearing principally on the heel. The curve being made, the right foot should be brought a little in advance of the left, when a curve in the opposite direction should be made with the left foot. But little progress will be made at first, but by leaning well on the heel in making the curves, and keeping the ankles inclined inwards, the forward motion will soon be acquired.

When a beginner has advanced so far, the next thing is to skate backwards.

To do this the fair skater must place herself in the same position as if she were going to skate forwards, as last described, with this difference, that instead of leaning on the heels, the weight of the body should now be on the toes; and both feet being on the ice, and the toes and ankles inclined inwards, a circle should be made with the right foot round the left: by describing this circle, the inside edge of the skate will be opposed to the surface of the ice in a direction almost at right angles to the other foot, and thus involuntarily a purchase can be obtained to push the left foot backwards.

Directly the circle is finished with the right, the same thing must be done with the left foot. A wriggling of the body from one side to the other will be the first effect of the above directions, both in the forward and backward movements; but the ability to make the circle larger, and to get a real though imperceptible stroke at each turn in the position of the body, will soon come with practice.[1]

If there should be any wind blowing, a beginner should take advantage of it to assist her in progressing either backwards or forwards, according to the desired direction of going.

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[1] This means of progression is well adapted for going over ice that is *thin and unsafe,* as the absence of the stroke causes less derangement of the ice than the usual method of striking out.

Although we are opposed as a rule to any help being given (when the temperament and courage of the fair skater can dispense with it) by means of holding her up by the hands, we think that if ever it can be employed with advantage it is in learning to skate backwards. Thus, let the teacher take the hands of the pupil and make her lean forwards, the ankles being inclined inwards; then skating forwards in the serpentine manner above described, let him quickly push the pupil backwards, first with the right and then with the left hand, by which means the weight of the body of the pupil is thrown first to the left and then to the right, and the circles above described are virtually made. By using the serpentine forward motion, the teacher in fact progresses forwards by the same means as he wishes his pupil to progress backwards. Thus a lady who had acquired either movement could easily instruct a lady in its reverse, whilst she improved her own practice.

At various times there will be gathered up a considerable momentum: then let the skater place her feet side by side, and so travel along, either in a straight line or curve, until the impulse is exhausted, and she may whilst doing this occasionally make an attempt to balance on one foot.

It would be useless to repeat here what we have written elsewhere, as to the acquisition of the inside edge forwards, and so we refer our fair readers to the instructions we have given at page 112 *et seq.*

The inside edge backwards is done in the old way, which is much the easiest, but very ugly, the body leans forward, full front, and the feet are turned in, and the skater backs as it were by alternate strokes. The toe of the striking skate is pressed into the ice on its inside edge, and the balancing taken up with the other, therefore the former ought to be lifted off while this is going on. But little attention can be given to the attitude. After the fair skater has attained this kind of inside edge backwards, she may, if she wishes to be more accomplished, turn to page 112 *et seq.*, where she will find a much better but more difficult modification of it, embracing a semi-sideways attitude, which will enable her to make larger curves and attain steadier balancing.

In another part of this work we have given a method of learning the outside edge forwards, but we promised in Chapter X, to give another means of acquiring it, and as the adoption of this *may* be of assistance we fulfil our promise.

Let the skater stand with both feet parallel, and, supposing the circle she is going to describe is from left to right, let her bend the right arm and force the right shoulder back, so that the thumb of the right hand is nearly touching it; and the palm of the hand being upwards, the head should be turned so that the eyes rest naturally on the uplifted thumb. Then striking with the inner edge of the left foot, she will find herself propelled in a circle; having gone some yards, then let her suddenly bring the left foot (which after making the stroke has been kept behind the right) across the right, and place it on the ice, and continue the circle with it on the inner edge, but only for a second, as the outer edge with the right is the work to be accomplished, the inner edge in this instance being simply used as a decoy to get the skater on to the right balance for putting down the right foot. It is very essential to keep the ankles stiff in attempting this practice, as if the skate is on the edge by reason of the bending of the ankle, and the body is not at a corresponding angle, a fall is almost certain: it is also necessary to attend to the position of the feet in placing them on the ice when crossing. The toe of either foot should be sufficiently turned out or in to proceed in the direction of the circle at once, on putting down the foot. If this is not attended to, the foot that is used for crossing goes off at a tangent, and probably throws the skater down, or at any rate throws her off the edge, or stops the impetus.

If a beginner will only go boldly at this figure, and attempt it with a certain amount of pace and dash, it will actually be easier to do than if she went slowly and cautiously to work, because, so long as she is moving in a circle and leaning over on the edge, she is safe, as the edge of the skate is opposed to the ice, and by progressing in a circle centrifugal force keeps her from falling. That this is a fact is clearly demonstrated by any one able to do outside edges perfectly, allowing himself to come to a standstill while on the edge; the effect, unless the perpendicular is immediately resumed, is a fall in the direction *in which the* experimentalist was leaning at the time of stoppage.

After performing a circle from left to right some half-dozen times, let the operation be reversed by describing a circle in a similar way, but from right to left. This practice, adhered to for two or three hours for several days, will enable any person with moderately strong ankles to acquire that great desideratum in skating, the outside edge. We consider putting up the hand in the manner we have described most important, as in that position, if the head and eyes are turned towards it and a start effected, the ankles being kept stiff, a leaning towards the centre must necessarily take place.

It must then be the care of the skater to use the outside edge almost entirely,—that is, the foot nearest the centre, the other being merely crossed over and put down, not for the purpose of learning the inside edge, but of continuing the circle and allowing the foot nearest the centre to be again put down while the body is leaning in that direction. We don't know the origin of the term, or whether it is in Suffolk only that it is used, but this going round a circle crossing the feet is there called "cutting plum-puddings."

The method of getting on to the edge being accomplished, the beginner should proceed to learn to put the previous practice to some use, and, discarding the inside for the purpose of help, learn to cut the outside edge on either foot alternately. To do this we think the best plan is to place two small pieces of snow about four yards apart, and cut the figure of 8 round them, going round one with the right and the other with the left foot.

The holding of the hand and arm in the position described will be found of great assistance in learning to come round. At the end of each circle it will be seen that as the foot with which a circle is going to be begun is put to the ice, the other foot is brought over from the outside edge (on which the circle had just been completed) to the inside edge, and the push to give the proper impetus to make the new circle made from that edge.

The figure of 8 is capital practice for outside edges, and it has this advantage, that it forces the beginner to work with each foot alternately.

The following two-footed figure in a backward direction —

embracing the inside and outside, will be found to assist the fair skater in another movement which we shall presently describe. The one under consideration is done as follows. Let her stand as if starting to skate in the ordinary way backwards, and when the circle has been made by the right foot round the left, the right, instead of being brought parallel to the left, is allowed to follow it in the curve which the left foot, being on the inside edge, will naturally assume, so that the right heel is close to the left toe, and the right foot on the outside and the left foot on the inside edge. When the half circle has been completed in this way, a stroke in the nature of the circle is made with the left foot, the heel of which is immediately brought to follow to the toe of the right, and so on *ad infinitum*. Although the foot that follows is said to be on the outside edge, all the real power of leaning over is gained from the inside edge of the foot that leads the other. The foot that follows is simply on the outside edge in consequence of the curve described by the preceding foot, and the fact of having two feet on the ice while on an edge. This is therefore a capital figure for learning inside edge backwards, and will give a great insight into outside backwards.

For acquiring the figure 3, let the learner begin with an outside edge forwards (say with the right foot), keeping the knee (for the nonce) slightly bent; when half a circle has been completed, the left shoulder should be suddenly brought round, and the knee straightened. This bringing round of the shoulder will give a twist to the body, and throw the skater on to the inside edge backwards, when the left shoulder must be immediately forced back; and the toe of the left foot pointed outwards, almost at right angles to the right; for if the shoulder is not kept back, or if the left toe be turned inwards, the skater comes round at once on the inside back, instead of making a curve as large on that edge as she had described on the outside forward at the beginning of the figure.

It will perhaps be found more easy at first to make the turn soon after getting on the outside edge, but it is essential to get thoroughly on the edge, as one often sees a beginner striking *with the left foot* and making the turn on the right directly the *stroke is made*, and never getting on the outside edge at all.

If when going on the inside backwards of a figure of 3, say on the right foot, the left is put down by its side and the right taken up and the curve continued, the skater must necessarily be on the outside edge backwards; but this will be found rather nervous work at first, as, being on the outside edge, she will not have the advantage of a leg to put down in case of difficulty, as she would were she doing an inside edge backwards; but by getting pretty well on the heel of the skate, and looking over the reverse shoulder (that is if skating with the right leg, looking over the left shoulder, and *vice versâ*), the difficulty will soon be overcome with practice. Holding up the hand and looking at it, as described for learning outside forward, will also in this practice be found very useful, as it has the effect of throwing the reverse shoulder back, and also throwing the skater more on to the heel of the skate than she would be if her hand were in front of her body.

Ladies who can accomplish the foregoing simple movements will be able to skate them in company; and the following pretty and simple combined figures, which we have borrowed from the archives of the Oxford Skating Society, will serve as a good introduction to the more elaborate "Club figures."

Half Eights (Fig. 139).—To commence this figure the fair skaters should take up their positions as upon each side of a square, and facing one another. At the word of command each skater should start with the right foot, on a curve of outside edge, and continue this for half a circle, when the left foot is put down and the stroke taken, either in the ordinary way or from the cross, and the whole circle of outside on the left foot skated.

This will bring each skater into the original starting-place of the other, and the movement can be repeated.

The figure can also be skated backwards, the position at starting being the same as above described, except that the skaters take up their position at the starting points with their backs instead of their faces towards each other.

Three-quarter Eights (Fig. 140).—This is very similar to the last figure, and is usually skated by four persons. They stand opposite and facing each other, at the points A, B, C, D, of the inner circle, and at the word of command each starts off on a curve of outside edge with the right foot, and goes three-quarters of a circle round the inner circle, when the left foot is put down, and the stroke taken in the ordinary way or from the cross, and a whole circle of outside edge is skated on the left foot. This brings the skaters to the inner circle again, when the movement is repeated.

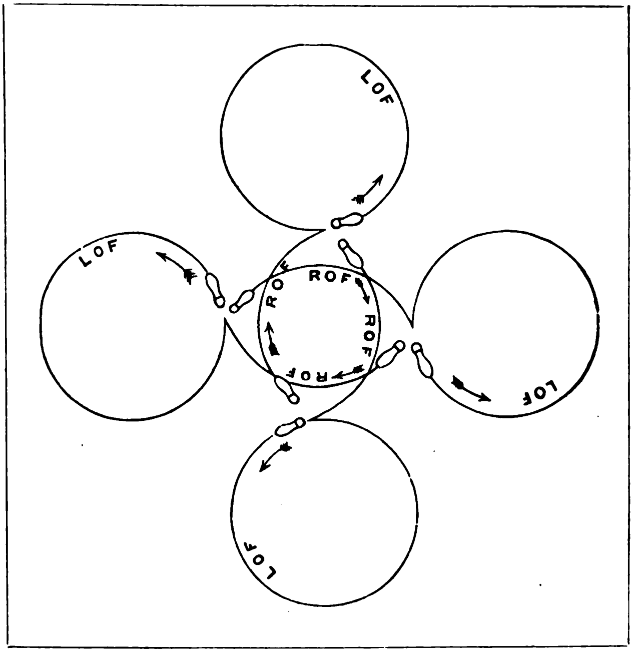

FIG. 139.—Half Eights.

The inner circle should be sufficiently small to enable each skater to take hold of her partner's hand while skating the three quarters of the inner circle; this has a very pretty effect, and renders the skating accurate.

The lettering will assist in understanding the diagram. This *figure* can also be skated backwards in a similar manner to *the last.*

The Centre Eight and a Half (Fig. 141).—This is a combination of the two foregoing figures. The four skaters take up their positions opposite and facing one another, and each starts off with a curve of outside edge, on the right foot, which is continued the whole circle, when the left is put down and the stroke taken, either in the ordinary way or from the cross, and half a circle skated away from the common inner circle; the half circle completed, the right is put down, and a whole circle skated, when the left is again made use of to bring the skater to the common inner circle, by a half circle of left outside.

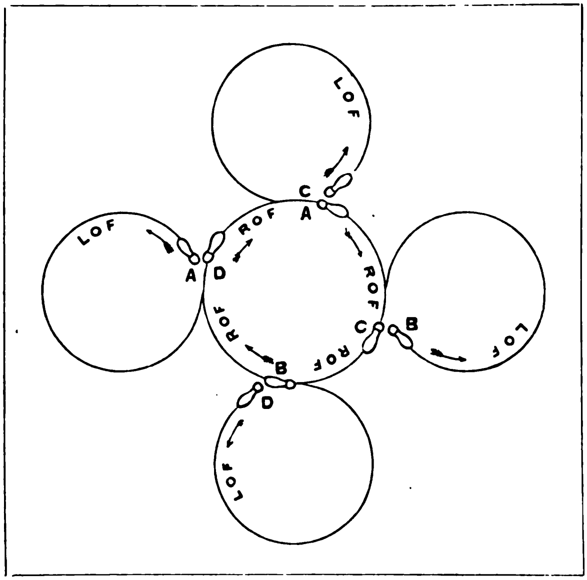

FIG. 140.—Three-quarter Eights.

Arrived at the common circle the movement is repeated, each skater taking her partner's hand (the four hands being thus crossed), which is retained until the whole circle, which all have in common, has been skated, when each again branches off as before described.

Reverse Centre Eight and a Half (Fig. 142).—This figure, which was planned by Mr. Henry Boswell, is exactly similar to the last in the curves used, but there are two centre circles instead of one, and one couple starts with the right foot round one of the circles, say the outer, while the other couple starts with the left round the other or inner circle:

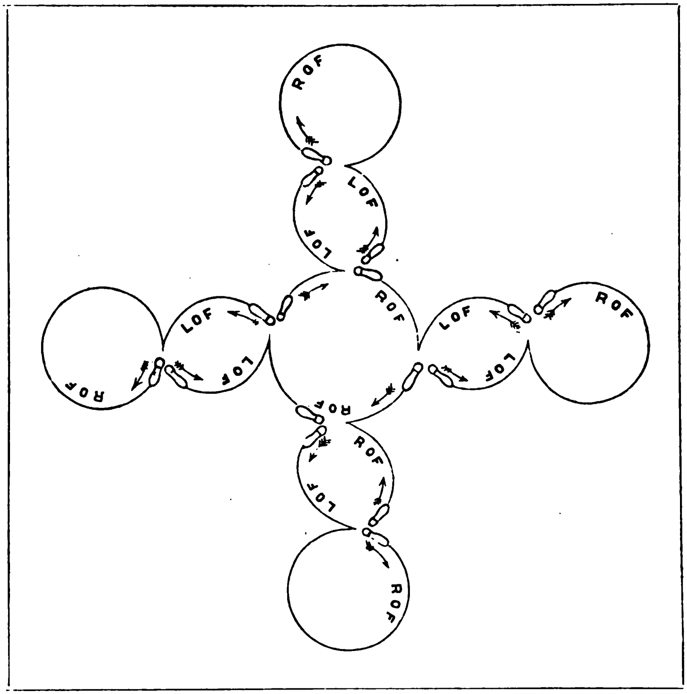

FIG. 141.—The Centre Eight and a Half.

the two couples are thus going round the centre in opposite directions, and the effect is very pretty, and there is no danger of collision, provided the outer and inner circles are accurately skated.

We trust that the acquisition of the above simple figures will impart to our fair readers the desire to accomplish some, if not all, of our Club figures. That it is possible for all our Club figures to be skated by ladies has been proved to demonstration by several lady members of the Club who have this

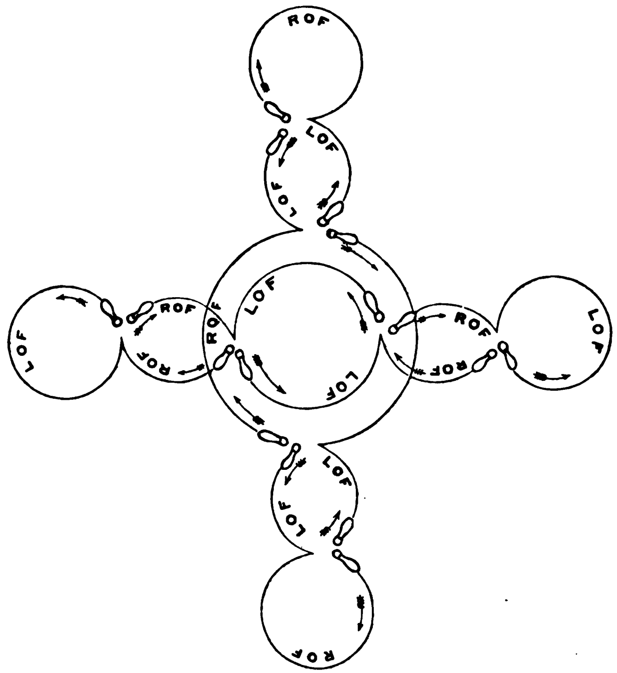

FIG. 142.—Reverse Centre Eight and a Half.

year taken their part in combined figures, and have skated them with as great power, and certainly with greater grace, than the generality of the gentlemen.

CHAPTER XVII.

NONDESCRIPT FIGURES.

In this chapter, according to promise, we shall notice a miscellaneous collection of curious movements, leaving it to the judgment, good taste, and pleasure of the skater to learn them or not, as he thinks proper; merely remarking, that he cannot be too careful in thinking lightly of or despising anything that might have a tendency to more completely educate the feet. It might so happen to some, that in learning one of these figures they might obtain the key to a better movement.

Although looking at them in the light of a relaxation from our more severe and classical studies, yet some may be of practical use. The easiest of all the movements in skating is

THE SERPENTINE FORWARDS ON BOTH FEET.

This is skated, both feet on the ice together, full front and parallel: a slight turn of the body and feet to the right and left alternately, and a corresponding pressure on the inside edge, are sufficient directions for this simple and easy method of progression. The same may be said of

THE SERPENTINE BACKWARDS ON BOTH FEET,

Which the reader will be able to work as readily. In these two movements we have certainly descended to the lowest depths of our art. It has often been suggested that the very timid might commence to learn after this method, and for *this reason we* have recommended it to the ladies. As a last *resource, perhaps,* such a means may be allowable; but we should be sorry to see it the rule, or where are our bold skaters to come from?

SERPENTINE LINE, BACKWARDS, WITH THE FEET FOLLOWING.

This is rather a pretty movement. Let the skater stand as if starting to skate in the ordinary way backwards, and when the circle has been made by the right foot round to left, the right, instead of being brought parallel to the left, is allowed to follow it in the curve which the left foot, being on the inside edge, will necessarily assume, so that the right heel is close to the left toe, and the right foot on the outside and the left foot on the inside edge; when the half circle has been completed in this way, a stroke in the nature of a circle is made with the left foot, the heel of which is immediately brought to follow to the toe of the right, and so on *ad infinitum.* If, instead of half circles, whole circles are formed, we shall get an eight instead of a serpentine line.

CONTINUOUS TWO-FOOTED EIGHT.

This can be taken up from the last movement.

Suppose the skater to be proceeding backwards on a curve both feet on the ice, and the right foot leading and on the outside edge (the left foot will of course be on the inside edge). When the whole circle is completed the balance of the body is shifted to the other side, and a curve in the opposite direction is made, the feet remaining in the same position; that is, the right foot leads, but it is now on the inside edge, while the left is on the outside. The change of edge gives the motive power. The movement can also be done in a forward direction, but appears to be more difficult.

THE STRAIGHT LINE FORWARDS.

This is done on one foot and on the flat of the iron, after a smart run for speed. The difficulty now consists in keeping off either edge, and preserving the line true without its aid, and it is a difficulty which not every skater will master. To look down is fatal to success; the eyes should be level with the horizon.

THE STRAIGHT LINE BACKWARDS

Will be taken up after a forward run for speed, and a turn to backwards, on to the foot selected. Greater difficulty than could be supposed attends this apparently simple movement, so great is the desire to get on to the edge. We are speaking of good skaters, not learners. With the wind in favour, an enormous distance may be thus traversed.

THE STRAIGHT LINE FORWARDS AND BACKWARDS, OR BACKWARDS AND FORWARDS,

Must be carried out by interposing the necessary turn on the one foot to effect the change. To regain the flat as soon after it as possible is no easy matter, and therefore becomes capital practice.

TREADING THE CIRCLE, ALSO KNOWN AS "LAP FOOT,"

Is done by placing one foot in front before the other when on an edge, and simply lifting each up and setting it down: a forward progression will take place. A much more effective figure is made when this is done in a backward direction, and enormous speed in a large circle can be attained.

THE "BACK SCRATCH," OR "ON TO RICHMOND."

This movement, which our ancestors called the Back Scratch, has been christened in America by the name of "On to Richmond." We extract from "The Skater's Text-book" the following description of it:—

"In executing the movement the skater is apparently endeavouring to go forward, but in reality goes backward.

"Stand with the left foot straight, and lifting the right foot clear of the ice, hoisting the toe of the foot to its greatest possible extent. In this position cross it over in front of and as far across the left as possible, at the same time allowing the weight of the body to fall upon the outside edge of the right foot. Raise the left foot, turning the toe out; cross it over in *front* of the right, allowing the weight of the body to come *upon the outside* edge of the left foot."

REVERSE "ON TO RICHMOND."

"This movement cannot be done until the skater is able to execute the 'change of edge roll forwards' with perfect ease. Like the 'On to Richmond' step, the skater is apparently endeavouring to go in an opposite direction from which he is really going, with the exception that in this movement he goes forwards instead of backwards. Stand upon the left foot, place the right across and behind the left, the toe of the right being thrown a little forward of the left on the outside edge, at the same time putting the weight upon the right foot, and after sliding about ten or twelve inches on the outside edge of the right, change quickly to the inside edge of the same foot, and sliding about the same distance as upon the outside edge, throw the left foot behind the right in the same manner as the right was thrown behind the left. Continuing this movement you will go forward and leave the following line in the ice:"—

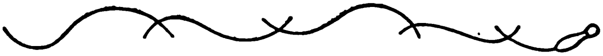

Fig. 143.

THE BACK-TWIST

Is when the feet are placed one before the other, and both being kept on the ice, impulse is obtained by twisting the feet with a snake-like or serpentine motion, out and in. In most of these and similar movements, the inclination of the body and the direction of going admit of being frequently changed.

JUMPING IN SKATES.

This seems a perilous feat at first, but it is not really so. We recommend all skaters to learn it, not on account of its elegance (although, by the by, one of the writers is acquainted with an old skater who likes a jump at the turn of the 3, and who was kind enough to tell him that his skating would be much improved by its introduction: it was his hobby, and to humour him he did it once or twice to show him that there was no particular difficulty in it), for it is ugly in the extreme. We are, of course, speaking of a jump completely off the ice of any height the skater can attain to. The Dutch, we believe, do three feet easily. It is most useful in enabling us to clear the obstacles that are frequently met with on the ice. With regard to broad-jumpers, Seward, the American sprint-runner, who was also a capital fast skater, is credited with having cleared twenty feet in skates.

THE STROKE FROM THE OUTSIDE TO THE INSIDE.

It is quite possible to obtain some useful impetus by knowing the action of this stroke; and although we cannot say very much in its favour as an addition to the beauties of figure-skating, we are well aware, from personal experience, that it is one of those little links in the chain of our art, the acquisition of which is a step towards obtaining complete mastery of the skate. The push or propelling stroke is got from the outside, either forwards or backwards, the inside corresponding to the direction: the curve being described may be taken up with the other foot, either when it is front, behind, or across.

The skater has probably done a little of it, when learning the outside forwards or backwards in the circle; and if so, he has only to dwell longer on the edge taken up from the outside stroke, balancing on one foot and in large curves. The stroke is then taken from C and D only.

One of the writers once worked very hard at this curious bit of skating, but after it had served his turn as an aid, he discontinued it, as it led up to nothing particular in figure-skating.

The descriptions of the following figures, viz., "Toe Dancing" and Pirouettes, "Spins," the "Flying Scud," the "Mercury," and the "Bishop Eight," have originated in America, and we again borrow from "The Skater's Text-book":—

TOE DANCING AND PIROUETTES.

"For these movements we can give no special rules. Toe dancing, as the name indicates, is any dance executed on the toes of the skates.

"The Pirouette is a toe spin on either foot. There are two different ways of starting: first, on the flat of the skate, rising to the toe; secondly, by starting on the simple No. 1 toe step and whirling on the pivot toe."

SPINS.

"Of these there are two distinct classes, viz. one-foot spins and two-foot spins. Of the one-foot spins there are eight, viz., starting on the outside edge forward, inside edge forward, outside edge backwards, and inside edge backwards: performing these on both feet makes the eight. These spins, although started on the edges, must be executed on the flat of the skate.

"*The right foot spin forward, skating on the outside edge.*—Start on a short outside edge roll, turning the head and shoulders to the right, and throwing the left foot over and about ten inches in front of the right knee, and gradually drawing it towards the knee while spinning.

"*The right foot spin forwards, starting on the inside edge.*—Start on the inside edge with a short roll, turning the head and shoulders to the left, and throwing the left foot over behind the right leg.

"The other one-foot spins are done in the same manner as those described.

"*Two-foot spins.*—Of these there are six, viz. the *plain* two-foot spin, (1) right to left, and (2) left to right; (3) the cross-foot spin, starting on the outside edge of the right foot, throwing the foot *behind;* (4) starting on the outside edge, right foot, crossing the foot in front; (5) doing No. 3 upon the left foot; (6) doing No. 4 upon the left foot.

"*The plain foot spins* are done by letting the two feet run about thirty inches apart, then turn the toes slightly in, drawing the feet suddenly together, and throwing the head and shoulders in the direction you wish to go. The body must be erect, and the hands at the side, to look well. This cannot be a good spin without twelve or fourteen revolutions.

"*The cross-foot spin* is done by starting off on a 'one-foot spin,' and crossing the balance-foot over and placing it upon the ice on the other side, the toes to be as near together as possible."

THE FLYING SCUD.

"This movement can be done by two persons only. The two persons join both hands, facing each other, one starting backwards and the other forwards. Start on the outside edge roll, one skater going forward on the left foot, and the other going backward on the right foot; the skater going forward changes to right, and the one going backward to the left foot, at the end of which roll each executes a figure 3, the forward person then going backwards, and the backwards one forward. This brings both skaters on the inside edge, which must be very short, changing from this edge to the outside of the other foot. The forward person will then go through the same movement that was executed by the one who first went forward, and *vice versâ*.

"This movement, as well as the following, is a 'field step,' which means that it is not done within circumscribed bounds, but is executed on the field of ice to any distance at the option of the skaters."

THE MERCURY.

"This movement, like the 'Flying Scud,' may be done only by two persons.

"Two persons join hands, the one starting backwards, the other forwards. The one going forward starts on the cross roll forward left foot, the partner starting on the cross roll backward right foot. The one going forward crosses the right foot over the left, describing a curve on the outside edge of the right, the partner doing the same backwards on the left foot. At the end of the curve both turn as in the figure 3, the one going forward changes to backward, and the partner changes to forward, each sliding on the outside edge. The one going forward then goes through the same motions as the partner did on the start."

THE BISHOP EIGHT.

"The diagram (Fig. 144) shows the figure as skated by *each* person, starting from the X and finishing the figure at the * with a pirouette.

"Two persons join hands and make a half circle on the right foot, outside edge forwards.

"Turn, making the figure 3 and changing hands; make half a circle on the inside edge, right foot.

"Change to the outside edge, left foot, and make half a circle outside edge backwards. Disengage hands, and make a half circle on the right foot, outside edge forward, making the circle outward from the centre at the figure. Turn, making the figure 3, and make a half circle backward on the right foot, inside edge.

"Place the toe of the left foot on the ice, and continue the circle on the right foot outside edge.

"Reverse the figure back to places, commencing with the left foot, and joining left hands."

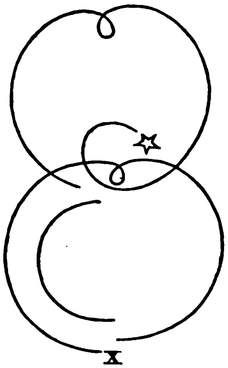

FIG. 144.—The Bishop Eight.

There is one other figure which we cull from "The Skater's Text-book," called the "Curtis Star." It is performed by using one foot as a pivot and the other as a scraper to cut the necessary lines, but we give it as an illustration of the manner in which it is possible to form all the letters of the alphabet by means of skates on ice. The standing on one foot and scraping lines with the other can hardly be called skating; therefore the observations which we make later on as to the myth of "cutting out one's name on the ice" are still true as applied to pure skating.

"We give a diagram of the 'Curtis Star' (Fig. 145). It is done in three parts. First, the circle. This is done by the simple 'inside edge forward toe step.' At the completion of the circle the skater jumps back clear of the circle so as to leave no marks inside of or across the circle. Second, the plain star. Standing with the left foot at No. 1, the right at No. 2, the skater lets the left foot run a little further away from the tight; then drawing it in, bearing hard on the heel of the right, he makes a heavy straight line from 2 to 4, at the end of which line he uses the heel as a pivot, and slides the left foot round to No. 3; then allowing the feet to go through the same motions as before, he makes the heavy straight line with the heel from 4 to 1, allowing the left foot to slide round to No. 5; going through the same motions, the right foot makes the heavy straight line from No. 1 to No. 3, sliding the left foot round to No. 2, and going through the same motions he makes the heavy straight line from No. 3 to No. 5, allowing the left foot to slide round to No. 4; and again going through the same motions makes the heavy straight line from No. 5 to No. 2, completing this portion of the movement. In making the straight lines the skater bears very lightly on the left foot, in order that he may leave no visible mark with that foot. Third, the curved lines, which are put in with the heel of the right skate, the left remaining outside the circle."

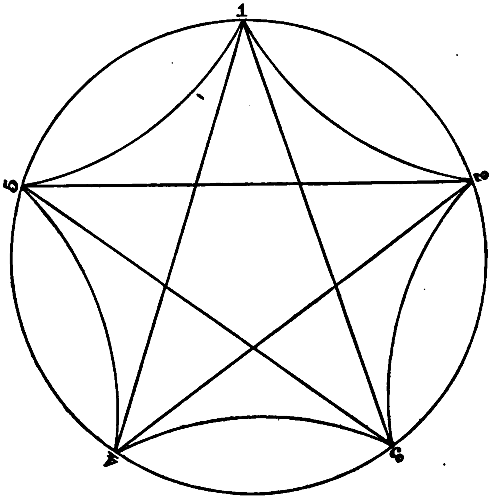

FIG. 145.—The Curtis Star.

ON CUTTING OUT YOUR NAME.

We have now finished our figures, but before we quite wind up the work, we must have our say on this topic. Who has not heard from many old skaters, or rather from those who class themselves as such, but more particularly from non-skaters of either sex, of a generation that is fast fading away, how some famous skater of their day *cut out his name*, and who has

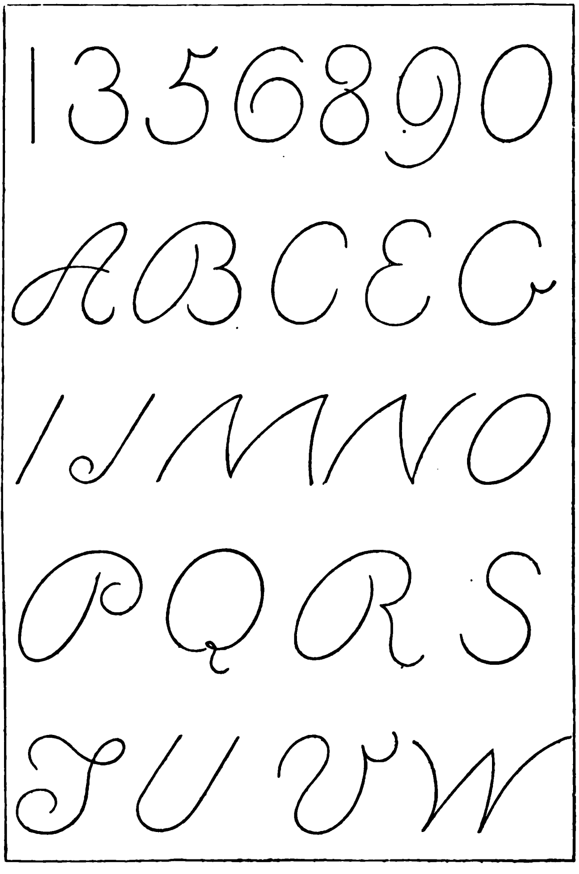

FIG. 146.—Some of these letters and figures are well-known results; by induction we conceive the others possible.

not brought down their ire if the possibility of the feat was doubted? Strange, too, in the *Times* for January 1864, may be read an account of a little girl of eleven years of age who cut out her name. We, too, have heard small boys declare they saw a skater cutting out his name; nay, even more, an old skater once told one of the writers he thought it was the operation that he was then engaged in! It is most strange, but no less strange than true, that this feat (except when done by standing on one foot and scraping the ice into the semblance of letters with the other) is an *impossibility* either to ancient or modern skating. When a boy, one of the writers used often to be in the company of the best skater of the locality in which he resided in the country, and he had attained this singular reputation: "He could cut out his name." On being asked, if it were true, if he would be kind enough to permit the inquirer to witness the feat, he ridiculed the idea of such a thing being possible; he could not do it, but he suggested that perhaps by standing still on one foot, and scratching and scribbling away with the other, as if the foot were armed with a pen, the idea might have arisen. This gentleman was a very fair and powerful skater, but his capabilities did not even extend to the double 3; and as for the serpentine line and Q, such things were utterly unknown in the country, as was every movement relating to combined skating.

This myth, Phœnix-like, rises from its ashes; you may, even at the present day, hear people talk about it. Have the skaters of the present day degenerated? We emphatically deny it; the art has never been so highly developed as at the present time. The cutting out of a name never was and never will be done; that is to say, by a method of pure skating. We will take a look back at some of our figures and letters, for the reader who has followed us is aware of the combinations that really do exist. Thus the 3 might serve as a B or E; the C, G, I, J, O, P, Q, S, U, V, W, N, M, W, exist, such as they are; and our figures are 1, 3, 5, 6, 8, 9, 0: and suppose we torture double turns into M U N, we shall have exhausted resources, almost the whole of which were unknown to the last generation. We leave it to the unprejudiced mind of any man who really understands advanced skating to corroborate us in our opinion, that the feat of "cutting out your name" by a method of pure continuous skating is impossible. The mere fact of a few of these letters making something like a name, even could we join them, does not alter the truth of our assertion; and as for a little girl of eleven doing such a feat, why, it is simply ridiculous.

The myth will not entirely die out until skating becomes better known, and this is now rapidly being the case. In the meantime it is the duty of every skater of either sex to do what they can to break down such a delusion. Let us weed out the fable and mystery of the art, and master some of its difficulties that do exist, without following this will-o'-the-wisp.

In conclusion, we think that the reader will agree with us that the movements described in this last chapter are very far removed from high art, which for the last time may be said to consist of balancing the body steadily on one foot in a perfect attitude, and getting fresh impulse from a change of feet, such changes being at long intervals, yet sufficiently close to keep up the motion with ease, grace, and speed, no matter what may be the nature of the turns and changes of edge the skater may think proper to introduce; the topmost branch of such high art being that in which skaters, possessed of these excellent qualities, merge their individual actions into the combined figure, which in itself must embrace not only the standard movements handed down to us by our forefathers, many of comparatively easy execution, but be ever ready to welcome with open arms the greatest difficulties of pure and graceful skating.

We have now but to wish the learner a hearty success, and bid him a kindly farewell.

APPENDIX.

RULES OF THE LONDON SKATING CLUB.

1. That the number of members be limited to 150 gentlemen and 20 ladies, exclusive of honorary members.

2. That a general meeting of the whole Club be held annually on the first Wednesday in December.

3. That at the annual general meeting a president, a vice-president, and a secretary and treasurer, be elected, who shall (*ex officio*) be members of the committee.

4. That a committee, not exceeding twenty, including *ex officio* members (five to be a quorum), shall be elected from the members, for managing the affairs of the Club, and that no vacancy in the committee be permanently filled up except at an annual general meeting; the committee, however, being at liberty to fill up any such vacancy at any time, subject to confirmation at the next annual general meeting.

5. That at the annual general meeting two members of the Club shall be appointed auditors, to audit the treasurer's accounts for the ensuing year; such accounts to be audited previously to the next annual general meeting.

6. That the committee shall meet for the transaction of business on the first Wednesday in December, and on such other days as the committee shall appoint.

7. That power be vested in the committee to amend or add to the existing Rules, such amendments or additions to be in full force (unless abrogated at a special general meeting) until the next annual general meeting, to which they shall be submitted for confirmation; and that the committee shall be bound to call a special general meeting, to consider such amendments and additions, upon a requisition to this effect being signed by twelve members of the Club, and addressed to the honorary secretary; general meeting to be convened within six days of the date of such requisition.

8. That every lady or gentleman desirous of becoming a member

shall be proposed in writing by one member and seconded in writing by another, to both of whom such candidate must be personally known, and who shall be or shall have been subscribing members, and whose subscriptions shall not be in arrear; the name and address of such candidate, together with the names of the proposer and seconder, shall then be communicated to the secretary, who shall notify them to each member of the committee; and such candidate shall then be balloted for as a vacancy may occur, and according to priority of nomination, at any meeting of the committee which may take place not less than thirty days after such notification; and one black ball in five shall exclude; but candidates having been invited to skate their test, and not doing so within seven days from the date of such invitation, may be postponed in favour of those candidates who, having been similarly invited, have skated their test.

9. That no gentleman shall be eligible as a member unless he be able to skate the forward cross roll, the backward cross roll, and a large three on each foot, to the satisfaction of the committee.

10. That any member of the Toxophilite Society who can pass the test, and is desirous of becoming a member of the Skating Club, be eligible for election as an *Extra Member*, and, if elected, be not liable to the entrance fee, such membership to continue so long as the Club's rink is in the Toxophilite Grounds, or so long as such member remains a member of the Toxophilite Society.

11. That any candidate coming forward in his turn for election and failing to pass the test, be removed to the bottom of the list of candidates, unless he retire altogether as a candidate.

12. That no lady be eligible as a member unless she be the wife, daughter, or sister of a member who shall be or shall have been a subscribing member, and her proposer or seconder state in writing that she be able to skate the outside edge forwards on each foot.

13. That the annual subscription be two guineas, to be due and payable on the first day of January, and that every member pay on election an entrance fee of three guineas and the subscription for the current year; but no member elected in December shall be iable to pay a subscription for the following year.

14. That any member who is absent from Great Britain during the entire skating season in any one year be exempted from the payment of the subscription for that year; and that the committee shall have the power of electing an additional member in place of the absentee if they think proper, such new member to be considered as a supernumerary member until the number be again reduced to the limit prescribed by Rule 1.

15. That every member be considered liable for the annual subscription until such member send in a resignation in writing to the secretary.

16. That power be vested in the committee, in special cases, to elect honorary members, such honorary members not to attend general meetings, or be eligible to any office in the Club.

17. That no member shall use the skating rink in the Toxophilite Grounds if and while such member's subscription for the current or any preceding year be unpaid for the space of seven days or upwards after the same shall have become due.

18. That any member contravening Rule 17 shall be fined ten shillings.

19. That power be vested in the committee to erase from the list of members of the Skating Club the names of those members whose subscriptions shall have been two years or more in arrear; but the committee may at their discretion, under special circumstances, reinstate such members upon payment of all arrears due from them, and this power may be exercised irrespective of the number of the Club for the time being, such reinstated members to be considered as supernumerary members only until the number be again reduced to the limit prescribed by Rule 1.

20. That members who shall have withdrawn their names from and shall be desirous of returning to the Club, shall, if re-elected, be again liable to the entrance fee.

21. That a list of the names of members who have not paid their subscriptions be suspended in the tents during the skating season, with the amounts of their respective arrears.

22. That members of the Club be distinguished by wearing a small model of a skate executed in silver, with which members shall provide themselves, at "HILL'S, Cutler, 4, Haymarket;" and that any member appearing on the ice without it shall be fined 2*s.* 6*d.*

23. That any member going upon the rink otherwise than upon skates shall be fined 2*s.* 6*d.*

24. That none but members, and strangers invited by the committee, be admitted to the tents or on the rink in the Toxophilite Grounds, but this Rule is not to prevent members of the Toxophilite Society, entitled to use the rink, from skating thereon.

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THE END.

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